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PART 2

AUTHORIZATION FOR NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION FOR FISCAL YEARS 1983 AND 1984

MAY 18, 1982.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

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Mr. FUQUA, from the Committee on Science and Technology submitted the following

REPORT

[To accompany H.R. 6324 which on May 12, 1982 was referred jointly to the Committees on Science and Technology and Merchant Marine and Fisheries, including minority and additional views]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science and Technology, to whom was referred the bill (H.R. 6324) to authorize appropriations for atmospheric, climatic, and ocean pollution activities of the National Oceanic and Atmospheric Administration for the fiscal years 1983 and 1984, and for other purposes, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

The amendment strikes out all after the enacting clause of the bill and inserts a new text which appears in italic type in the reported bill.

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SHORT TITLE

SECTION 1. This Act may be cited as the "Atmospheric, Climatic, and Ocean Pollution Act of 1982".

TITLE I—DECLARATION OF FINDINGS AND PURPOSES

SEC. 101. The Congress of the United States finds that:

(1) The oceans and atmosphere surrounding and within the jurisdiction of the United States play a vital role in the Nation's welfare, economic self-sufficiency, and national security.

(2) The National Oceanic and Atmospheric Administration is the lead agency for oceanic and atmospheric matters in the Nation. It was created on October 3, 1970, by Reorganization Plan Numbered 4 of 1970 to bring together many of the Nation's civil programs related to the oceans and atmosphere. The National Oceanic and Atmospheric Administration's broad goals include the development and operation of national programs to—

(A) manage and conserve selected marine resources for the economic and social good of the Nation;

(B) monitor and predict weather and environmental conditions for the protection of life and property;

(C) archive, analyze, and disseminate data on geophysical and solar-terrestrial phenomena;

(D) provide basic maps, charts, surveys, and specialized data for safe navigation; and

(E) provide research to advance oceanic and atmospheric science and technology for the better management of the environment and the rational use of our natural resources.

(3) A simplified, streamlined, and consolidated authorization of apropriations and oversight process will greatly assist the National Oceanic and Atmospheric Administration in attaining its goals.

SEC. 102. The purposes of the Congress in this Act are—

(1) to ensure that the National Oceanic and Atmospheric Administration, the lead agency for civil oceanic and atmospheric activities and programs, operates under a clear statutory charter; and

(2) to simplify, streamline, and consolidate the authorization of appropriations for the National Oceanic and Atmospheric Administration, within the Department of Commerce, such that the National Oceanic and Atmospheric Administration's programs can be viewed in a coherent fashion, and such that the authorization process, previously fragmented and unduly time consuming, will be significantly reduced.

TITLE II—GENERAL PROGRAM AUTHORIZATIONS AND REPORTING REQUIRMENTS

SEC. 201. (a) There are authorized to be appropriated to the National Oceanic and Atmospheric Administration of the Department of Commerce for atmospheric, climatic, and ocean pollution programs:

(1) $17,819,000 in fiscal year 1983 and $18,888,000 in fiscal year 1984 for Marine Ecosystems Research, Ocean Dumping Research, and Great Lakes Research.

(2) $323,860,000 in fiscal year 1983 and $343,292,000 in fiscal year 1984 for the Weather Services and Supporting Research.

(3) $17,764,000 in fiscal year 1983 and $18,830,000 in fiscal year 1984 for Atmospheric Research.

(4) $1,800,000 in fiscal year 1983 and $1,908,000 in fiscal year 1984 for the National Climate Program Office.

(5) $156,208,000 in fiscal year 1983 and $165,580,000 in fiscal year 1984 for Environmental Satellite Services.

(6) $25,328,000 in fiscal year 1983 and $26,848,000 in fiscal year 1984 for Environmental Data and Information Services.

(b) Funds may be transferred between categories listed in subsection (a), except that no funds may be transferred from any particular category or categories listed in such subsection if the total of the funds so transferred from that particular category would exceed 10 per centum thereof, and no funds may be transferred to any particular category or categories listed in subsection (a) from any other category or categories listed in subsection (a) if the total of the funds so transferred to that particular category would exceed 10 per centum thererof, unless—

(1) a period of thirty legislative days has passed after the Administrator of the National Oceanic and Atmospheric Administration or his designee has transmitted to the Speaker of the House of Representatives and to the President of the Senate a written report containing a full and complete statement concerning the nature of the transfer involved and the reason therefor; or

(2) each committee of the House of Representatives and the Senate having jurisdiction over the subject matter involved, before the expiration of such period, has transmitted to the Administrator written notice to the effect that each committee has no objection to the proposed action.

SEC. 202. (a) The Administrator of the National Oceanic and Atmospheric Administration shall keep the appropriate committees of the House of Representatives and the Senate fully and currently informed about all aspects of the atmospheric, climatic, and ocean pollution activities for such Administration.

(b) Each year, at the time of the submission of the President's annual budget request, the Administrator shall make available to the appropriate committees of Congress sufficient copies of a report fully describing the funds requested and the atmospheric, climatic, and ocean pollution activities to be carried out with these funds.

SEC. 203. (a) The Administrator of the National Oceanic and Atmospheric Administration shall submit to the Congress and the President, on the date of submission of the fiscal year 1984 budget request, a report on the importance of meteorological satellites to weather forecasting. Such report shall include—

(1) a quantitative analysis of the impacts of weather satellites on weather forecasting;

(2) a quantitative comparison of weather forecasts generated when two, one, or no polar-orbiting satellites are operating;

(3) the importance of National Oceanic and Atmospheric Administration weather satellite data to weather forecasting in other nations;

(4) a statistical analysis of expected lifetimes for National Oceanic and Atmospheric Administration weather statellites;

(5) an analysis of replacement time for a National Oceanic and Atmospheric Administration weather satellite in the event of a launch or operational failure or of consecutive launch or operational failures; and

(6) an analysis of the present or future appropriateness of transferring civilian meteorolgical satellites to the private sector.

(b) No moneys authorized by this Act shall be used to transfer to the private sector the ownership or management of any meteorolgical satellite system and associated ground system equipment unless (1) the Secretary of Commerce or his designee has presented, in writing, to the Speaker of the House of Representatives and the President of the Senate, and to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate, a comprehensive plan for the proposed transfer, and (2) each such committee has transmitted to the Secretary written notice (within thirty days after receipt of the plan) to the effect that such committee has no objection to the proposed action.

SEC. 204. The Administrator of the National Oceanic and Atmospheric Administration shall submit to the Congress and the President on the date of submission of the fiscal year 1984 budget request, a report on the future organization and technological capabilities of the National Weather Service. Such report shall include—

(1) preliminary cost estimates and a preliminary deployment schedule for the next generation radar system;

(2) a preliminary plan for improvement of mesoscale weather forecasting over the next decade; and

(3) a preliminary ten-year plan for the reorganization and consolidation of the Weather Service Forecast Offices and the Weather Service Offices. The plan shall include a list of the criteria to be used in determining those offices that are to be closed or consolidated during the ten-year period.

TITLE III—NATIONAL CLIMATE PROGRAM

SEC. 301. This title may be cited as the "National Climate Program Amendments of 1982".

SEC. 302. Section 4 of the National Climate Program Act (15 U.S.C. 2904) is amended—

(1) by redesignating paragraphs (1) through (3) as paragraphs (2) through (4), respectively, and

(2) by inserting before paragraph (2), as so redesignated, the following new paragraph:

"(1) The term 'Board' means the Climate Program Policy Board.".

SEC. 303. (a) Subsection (c) of section of the National Climate Program Act (15 U.S.C. 2904(c)) is amended—

(1) by inserting "(1)" before "The Secretary",

(2) by designating the third sentence as paragraph (4), and

(3) by striking out the second sentence and inserting in lieu thereof the following new paragraphs:

"(2) The Office shall—

"(A) serve as the lead entity responsible for administering the program,

"(B) be headed by a director who shall represent the Climate Program Policy Board and shall be the spokesman for the program,

"(C) serve as the staff for the Board and its supporting committees and working groups,

"(D) review each agency budget request transmitted under subsection (h)(1) and submit an analysis of the requests to the Board for its review,

"(E) be responsible for coordinating interagency participation in international climate-related activities, and

"(F) work with the National Academy of sciences and other private, academic, State, and local groups in preparing and implementing the climate plan (described in subsection (d)(9)) and the program.

The analysis described in subparagraph (D) shall include an analysis of how each agency's budget request relates to the priorities and goals of the program established pursuant to this Act.

"(3) The Secretary may provide, through the Office, financial assistance, in the form of contracts or grant or cooperative agreements, for climate-related activities which are needed to meet the goals and priorities of the program set forth in the climate plan pursuant to subsection (d)(9), if such goals and priorities are not being adequately addressed by any Federal department, agency, or instrumentality.".

(b) Subsection (d) of such section is amended—

(1) by striking out the semicolon at the end of paragraph (7) and inserting in lieu thereof a period and the following: "Such mechanisms may provide, among others, for the following State and regional services and functions: (A) studies relating to and analyses of climatic effects on agricultural production, water resources, energy needs, and other critical sectors of the economy, (B) atmospheric data collection and monitoring on a statewide and regional basis, (C) advice to regional, State, and local government agencies regarding climate-related issues, (D) information to users within the State regarding climate and climatic effects, and (E) information to the Secretary regarding the needs of persons within the State for climate-related services, information, and data. The Secretary may make annual grants to any State or group of States, such grants to be made available to public or private educational institutions, to State agencies, and to other persons or institutions qualified to conduct climate-related studies or provide climate-related services;",

(2) by striking out "biennially" in paragraph (9) and inserting in lieu thereof "at a frequency (not more often than biennially or less often than quadrennially) determined by the Board", and

(3) by striking out "the intergovernmental program under section 6" in paragraph (9) and inserting in lieu thereof "the intergovernmental program described in paragraph (7)".

(c) Such section is amended by striking out subsection (e) and inserting in lieu thereof the following new subsection:

"(e) CLIMATE PROGRAM POLICY BOARD.—(1) The Secretary shall establish and maintain an interagency Climate Program Policy Board, consisting of representatives of the Federal agencies specified in subsection (b)(2) and any other agency which the Secretary believes should participate in the program.

"(2) The Board shall—

"(A) be responsible for coordinated planning and progress review for the program.

"(B) review all agency and department budget requests related to climate transmitted under subsection (h)(1) and submit a report to the Office of Management and Budget concerning such budget requests,

"(C) establish and maintain such interagency groups as the Board determines to be necessary to carry out its activities, and

"(D) establish and maintain a committee of users and producers of climate data, information, and services to advise the Board, the Director, and the Congress on the conduct of the program.

"(3) The Board biennially shall select a chair from among its members. A Board member who is a representative of an agency may not serve as chair of the Board for a term if an individual who represented that same agency on the Board served as the Board's chair for the previous term.".

(d) Subsection (f)(2) of such section is amended by inserting "with the Office" after "shall cooperate".

(e) The first sentence of subsection (g)(1) of such section is amended by inserting before the period at the end the following: "and shall transmit a copy of such request to the National Climate Program Office".

Sec. 304. Section 6 of the National Climate Program Act (15 U.S.C. 2905) is repealed.

Sec. 305. Section 7 of the National Climate Program Act (15 U.S.C. 2906) is amended by striking out "January 30" before paragraph (a) and inserting in lieu thereof "March 31".

Sec. 306. Section 8(a) of the National Climate Program Act (15 U.S.C. 2907(a)) is amended by striking out ", to the extent provided or approved in advance in appropriation Acts,".

Sec. 307. Of the funds authorized for the National Climate Program Office for each of fiscal years 1983 and 1984 pursuant to section 201(a)(4) of this Act, at least 25 per centum shall be made available during each fiscal year for intergovernmental climate-related activities (described in section 5(d)(7) of the National Climate Program Act) and at least 20 per centum shall be made available during each fiscal year for experimental climate forecast centers (described in section 5(d)(8) of the National Climate Program Act).

TITLE IV—GREAT LAKES PROTECTION

Sec. 401. This title may be cited as the "Great Lakes Protection Act of 1982".

Sec. 402. The National Ocean Pollution Planning Act of 1978 (33 U.S.C. 1701-1709) is amended—

(1) by redesignating section 2 as section 101;

(2) by striking out "Act" in subsection (b) of section 101 (as redesignated by paragraph (1)) and inserting in lieu therefor "title";

(3) by redesignating sections 4, 5, and 6 as sections 102, 103, and 104, respectively;

(4) by striking out "under section 6" in subsection (b)(3) of section 103 (as redesignated by paragraph (3)) and inserting in lieu thereof "under section 104";

(5) by striking out "pursuant to section 4(b)(1)(B)" in subsection (a) of section 104 (as redesignated by paragraph (3)) and inserting in lieu thereof "pursuant to section 102(b)(1)(B)";

(6) by striking out sections 3, 7, 8, 9, and 10;

(7) by inserting after the first section the following:

"SEC. 2. DEFINITIONS.

"For purposes of this Act (unless the context requires otherwise)—

"(1) the term 'Administration' means the National Oceanic and Atmospheric Administration;

"(2) the term 'Administrator' means the Administrator of the National Oceanic and Atmospheric Administration;

"(3) the term 'Director' means the Director of the Office of Science and Technology Policy in the Executive Office of the President;

"(4) the term 'Executive Director' means the Executive Director of the Great Lakes Research Office established by section 202 of this Act;

"(5) the term 'Great Lakes' means Lake Ontario (including the Saint Lawrence River from Lake Ontario to the forty-fifth parallel of latitude), Lake Erie, Lake Huron (including Lake Saint Clair), Lake Michigan, and Lake Superior;

"(6) the term 'marine environment' means the coastal zone (as that term is defined in section 304(1) of the Coastal Zone Management Act of 1972 (16 U.S.C. 1453(1))), the seabed, subsoil, and waters of the territorial sea of the United States, the waters of any zone over which the United States asserts exclusive fishery management authority, the waters of the high seas, the seabed and subsoil of and beyond the outer Continental Shelf, and the Great Lakes;

"(7) the term 'ocean and coastal resource' means any resource, whether living (including natural or cultured plant life, fish, shellfish, marine mammals, and wildlife), nonliving (including energy sources, minerals, and chemical substances), manmade, tangible, intangible, actual, or potential which is located in, derived from, or traceable, to, the marine environment and includes the habitat of any such living resource, the coastal space, the ecosystems, the nutrient-rich areas, and the other components of the marine environment which contribute to or provide (or which are capable of contributing to or providing) recreational, scenic, esthetic, biological, habitational, commercial, economic, or conservation values; and

"(8) the term 'ocean pollution' means any short-term or long-term change in the marine environment.

"TITLE I—OCEAN POLLUTION RESEARCH";

and

(8) by adding after section 104 (as redesignated by paragraph (3)) the following new titles:

"TITLE II—GREAT LAKES PROTECTION

"SEC. 201. FINDINGS, PURPOSE, AND DECLARATION OF POLICY.

"(a) Findings.—The Congress finds that—

"(1) the Great Lakes (containing 95 percent of the surface fresh water of the United States and 20 percent of the world's fresh water) are among the greatest natural resources in the world, continuously serving the people of the United States and other nations as important sources of food, fresh water, recreation, beauty, and enjoyment.

"(2) the Great Lakes are among the world's major waterways, each year carrying tons of waterborne shipping to and from all parts of the globe;

"(3) the productivity and beauty of the Great Lakes in recent years have been diminished and threatened by water pollution, shoreline erosion, and sedimentation;

"(4) numerous Federal agencies have initiated and supported research projects to study, enhance, manage, preserve, protect, or restore the resources of the Great Lakes;

"(5) the various research projects relating to the Great Lakes, including those conducted at the college and university level and those conducted at the State and local level, can be more effectively coordinated in order to obtain maximum benefits; and

"(6) a greater awareness of the importance of preserving and protecting the environmental quality of the Great Lakes is in the national interest.

"(b) Purpose.—The purpose of this title is—

"(1) to provide for a rational and effective coordination of federally supported research aimed at increasing fundamental knowledge in support of efforts to preserve and protect the environmental quality of the Great Lakes;

"(2) to identify the needs and priorities for such research as will be required in the future to preserve and protect the environmental quality of the Great Lakes;

"(3) to assure a comprehensive and balanced approach to federally supported research on the Great Lakes;

"(4) to encourage the utilization of the results and findings of research relating to the Great Lakes in the decisionmaking processes which affect the environmental quality of the Great Lakes; and

"(5) to foster public understanding, and to assure greater understanding at all levels of government, of the role of the Great Lakes as a unique national resource and the greatest ecological entity of its kind.

"(c) Declaration of Policy.—The Congress, in recognizing the Great Lakes to be a unique national and international resource, declares that—

"(1) it shall be the continuing policy of the Federal Government, in cooperation with State and local governments and other concerned public and private organizations, to use all practicable means and measures in a manner calculated to enhance, preserve, and protect the environmental quality of the Great Lakes, to create and maintain conditions under which individuals, industry, and the Great Lakes can exist in productive harmony, and to fulfill the social, economic, and other requirements of present and future generations; and

"(2) it shall be the policy of the Federal Government to maximize international cooperation with Canada and other nations in maintaining, enhancing, preserving, and protecting the environmental quality of the Great Lakes consistent with the foreign and domestic policies of the United States.

"SEC. 202. GREAT LAKES RESEARCH OFFICE.

"(a)(1) Establishment.—There is established within the Administration a Great Lakers Research Office. All facilities of the Great Lakes Research Office shall be located geographically either in the State of Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio, Pennsylvania, or New York.

"(2) Executive Director.—The Great Lakes Research Office established by paragraph (1) shall be directed by an Executive Director appointed by the Administrator. Before making any appointment, the Administrator shall seek and recommendation of the Governors of Minnesota, Wisconsin, Illinois, Michigan, Indiana, Ohio, Pennsylvania and New York with respect to individuals who are qualified to serve as the Executive Director.

"(3) Staff.—The Executive Director may appoint such staff as the Executive Director determines are necessary to carry out the duties and responsibilities and to fulfill the purposed of this title. The staff appointed pursuant to this paragraph shall be appointed subject to the provisions of title 5 of the United States Code governing appointments in the competitive service and shall be paid in accordance with the provisions of chapter 51 and subchapter III of chapter 53 of such title relating to classification and General Schedule pay rates.

"(b) Inventory.—

"(1) Compilation.—Not later than the date occuring one year after the date of the enactment of this title the Executive Director shall compile an inventory of major actions taken, or planned to be taken, by Federal, State, or local governments which have, or may have, a significant effect on the environmental quality of the Great Lakes (with the significance of the effect to be determined by the Executive Director in conformance with policy set forth in section 201). The inventory may be limited by the Executive Director to an inventory of major actions taken after January 1, 1977.

"(2) Review.—The Executive Director shall review the inventory compiled pursuant to paragraph (1), and include in the inventory any additional major actions described in paragraph (1), not later than the date occuring three calendar months after the date the compilation of such inventory is completed and not later than each date occuring three months after such review is completed. The Executive Director shall consult with Federal State, and local officials in reviewing the inventory.

"(3) Submission.—The inventory compiled pursuant to paragraph (1), and each review made pursuant to paragraph (2), shall be submitted to the President and the Congress.

"(c) Functions of Executive Director.—

"(1) Knowledge of programs and projects.—The Executive Director shall be responsible for knowledge of programs and projects conducted or funded by the Federal Government which relate to the Great Lakes, including any program or project assisted under the National Sea Grant College Program Act (33 U.S.C. 1121-1131) and any program or project which carries on research directed toward enhancing, preserving, or protecting the environmental quality of the Great Lakes.

"(2) Direct research.—The Executive Director may direct the staff of the Great Lakes Research Office to conduct direct research in order to carry out the duties and responsibilities of the Office and to fulfill the purposes of this title.

"(3) Contracts.—The Executive Director may enter into any contract which the Executive Director determines is necessary to carry out the duties and responsibilities of the Office.

"(d) Consultation and Advisement by Executive Director.—In carrying out this title, the Executive Director shall—

"(1) consult with Federal, State, and local governmental officials responsible for maintaining, enhancing, preserving, protecting, or monitoring the environmental quality of the Great Lakes, including the Secretary of the Interior, the Administrator of the Environmental Protection Agency, the Director of the Office of Science and Technology Policy in the Executive Office of the President, the President of the National Academy of Sciences, the Director of the National Institutes of Health, the Chairman of the United States Section of the International Joint Commission—United States and Canada, the Chairman of the United States Section of the Great Lakes Fishery Commission, the Executive Director of the Great Lakes Commission, and the Chief of Engineers of the United States Army Corps of Engineers; and

"(2) advise such Federal, State, and local governmental officials on the effect of any Federal, State, or local governmental program or project on the environmental quality of the Great Lakes.

"(e) **Report.**—Not later than the date occurring one calendar year after the date of the enactment of this title, the Executive Director shall submit to the President and the Congress a report containing—

"(1) information on the current state of research efforts conducted or supported by the Federal Government to improve the environmental quality of the Great Lakes;

"(2) recommendations for the improvement, increased coordination, and use of such research efforts;

"(3) information on the degree of coordination among the States in the vicinity of the Great Lakes in efforts to preserve and protect the environmental quality of the Great Lakes; and

"(4) recommendations for the improvement of such coordination among the States.

"SEC. 203. GREAT LAKES ENVIRONMENTAL IMPACT ANALYSIS.

"(a) **Appendix.**—The responsible Federal official shall include in every statement included pursuant to section 102(2)(C) of the National Environmental Policy Act of 1969 (42 U.S.C. 4332(2)(C)) in a recommendation or report on proposals for legislation, and other major Federal actions, which significantly affect the Great Lakes (with the significance of the effect to be determined by the Executive Director in conformance with the policy set forth in section 201) an appendix which makes special reference to the Great Lakes and which contains—

"(1) an index to all material contained in such statement which relates to the Great Lakes; and

"(2) a summary of all material contained in such statement which relates to the Great Lakes.

"(b) **Comments.**—The Executive Director shall submit to the responsible Federal official comments on each statement described in subsection (a) before the statement is included in a recommendation or report pursuant to section 102(2)(C) of the National Environmental Policy Act of 1969 (42 U.S.C. 4332(2)(C)).

"(c) **Submission of Appendix and Comments.**—Copies of any appendix required to be included in a statement pursuant to subsection (a), any comments submitted by the Executive Director pursuant to subsection (b), shall be submitted to the President and made available to the public pursuant to section 552 of title 5 of the United States Code.

"TITLE III—GENERAL PROVISIONS

"SEC. 301. INTERAGENCY COOPERATION.

"The head of each department, agency, or other instrumentality of the Federal Government which is engaged in, concerned with, or has authority over programs relating to ocean pollution research, development, and monitoring or over research to maintain, enhance, preserve, or protect the environmental quality of the Great Lakes—

"(1) shall cooperate with the Administrator in carrying out the purposes of title I and shall cooperate with the Administrator and the Executive Director in carrying out the purposes of title II;

"(2) may, upon written request from the Administrator, Director, or Executive Director, make available to the Administrator, Director, or Executive Director such personnel (with their consent and without prejudice to their position and rating), services, or facilities as may be necessary to assist the Administrator, Director, or Executive Director in achieving the purposes of this Act;

"(3) shall, upon written request from the Administrator, Director, or Executive Director, furnish such data or other information as the Administrator, Director, or Executive Director determines is necessary to fulfill the purposes of this Act.

"SEC. 302. DISSEMINATION OF INFORMATION.

"(a) **Ocean Pollution Information.**—The Administrator shall ensure that the results, findings, and information regarding ocean pollution research, development, and monitoring programs conducted or sponsored by the Federal Government are disseminated in a timely manner and in useful forms to relevant departments, agencies, and instrumentalities of the Federal Government and to other persons having an interest in ocean pollution research, development, and monitoring.

"(b) **Great Lakes Information.**—The Administrator and the Executive Director shall ensure that the results, findings and information regarding the Great Lakes compiled by the Great Lakes Research Office are disseminated in a timely manner and in useful forms to relevant departments, agencies, and instrumentalities of the

Federal Government and to other persons having an interest in the environmental quality of the Great Lakes.

"SEC. 303. EFFECT ON OTHER LAWS.

"Nothing in this Act shall be construed to amend, restrict, or otherwise alter the authority of any Federal department, agency, or instrumentality under any law to undertake research, development, and monitoring relating to ocean pollution, to conduct research relating to the Great Lakes, or to undertake action pursuant to any other Federal law.

"SEC. 304. AUTHORIZATION OF APPROPRIATIONS.

"(a) AUTHORIZATION.—There are authorized to be appropriated to the Administration for the purposes of carrying out this Act not to exceed $5,000,000 for the fiscal year ending September 30, 1979; not to exceed $4,300,000 for the fiscal year ending September 30, 1980; not to exceed $3,000,000 for the fiscal year ending September 30, 1981; not to exceed $4,000,000 for the fiscal year ending September 30, 1982; and, of the funds authorized pursuant to section 201(a) of the Atmospheric, Climatic, and Ocean Pollution Act 1982, not to exceed $2,800,000 or the fiscal year ending September 30, 1983 and not to exceed $2,800,000 for the fiscal year ending September 30, 1984.

"(b) LIMITATION.—Of any amount appropriated for a fiscal year ending after September 30, 1982, under the authorization contained in subsection (a) an amount not more that $750,000 may be expended by the Executive Director during a fiscal year to carry out title II of this Act.".

TITLE V—OCEAN POLLUTION RESEARCH

SEC. 501. Section 201 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1441) is amended by striking out "from time to time, not less frequently than annually", and inserting in lieu thereof "not later than March 1 of each year".

SEC. 502. Section 202 of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1442) is amended—

(1) by adding at the end of subsection (a) the following new sentence: "Such program shall include, but not be limited to—

"(1) the development of techniques to quantify and define, using scientific tests, the degradation of the marine environment;

"(2) cooperative efforts with the Administrator of the Environmental Protection Agency to evaluate the usefulness of such techniques to the permit criteria program specified in section 102(a) of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1442);

"(3) the assessment of the ability of the marine environment to assimilate materials without degradation; and

"(4) continuing montoring programs to assess the health of the marine environment, including but not limited to monitoring of bottom oxygen concentrations; contaminant levels in biota, sediments, and the water column; diseases in fish and shellfish; and changes in types and abundance of indicator species."; and

(2) by striking out "In March of each year," in subsection (c) and inserting in lieu thereof "Not later than March 1 of each year,".

SEC. 503. The Administrator of the National Oceanic and Atmospheric Administration, in cooperation with the Administrator of the Environmental Protection Agency, shall submit to the Congress and the President, not later than December 31, 1983, a report on sewage sludge disposal in the New York City region. Such report shall include an evaluation of the social, economic, environmental, and health factors associated with alternative methods of waste disposal and a cost/benefit comparison of these alternatives. Such alternatives shall include landfill disposal, incineration, and ocean dumping.

SEC. 504. Of the funds authorized pursuant to section 201(a)(1) of this Act, $12,000,000 is authorized to be appropriated in fiscal year 1983 and $12,500,000 in fiscal year 1984 to carry out the provisions of title II of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1441). Of these funds, at least $500,000 shall be made available in each of the fiscal years 1983 and 1984 to carry out the study authorized in section 503 of this Act.

TITLE VI—OTHER PROGRAMS

SEC. 601. Of the funds authorized pursuant to section 201(a)(3) of this Act, $100,000 is authorized to be appropriated in each of the fiscal years 1983 and 1984 to carry out the provisions of the Act entitled "An Act to provide for the reporting of weather modification activities to the Federal Government", as amended (15 U.S.C. 330).

I. The Purpose of the Bill

The purposes of the bill are: to ensure that the National Oceanic and Atmospheric Administration (NOAA), the lead agency for civil oceanic and atmospheric activities and programs, operates under a clear statutory charter; to simplify, steamline, and consolidate the authorization of appropriations for NOAA, within the Department of Commerce, such that NOAA's programs can be viewed in a coherent fashion, and such that the authorization process, previously fragmented and unduly time-consuming, will be significantly reduced; to reauthorize the National Climate Program Act; to reauthorize the National Ocean Pollution Planning Act; to reauthorize Title II of the Marine Protection, Research, and Sanctuaries Act, and to reauthorize the Weather Modification Reporting Act.

II. Committee Actions

The Subcommittee on Natural Resources, Agriculture Research, and Environment held four days of hearings on the atmospheric, climatic, and ocean pollution activities of the National Oceanic and Atmospheric Administration on February 23, February 25, March 3, and March 16, 1982. Testimony was received from NOAA officials and more than 35 public witnesses. In response to these hearings, a Committee print of a bill authorizing appropriations for NOAA was ordered reported by the Subcommittee on May 5, 1982 by a recorded vote of 7-3; on May 6, 1982, Mr. Scheuer (with Mr. Blanchard, Mr. Brown of California, Mrs. Schneider, Mr. Walgren, and Mr. White) introduced the Committee print (as amended) as H.R. 6324. The full Committee on Science and Technology ordered the amended bill reported on May 18, 1982, by voice vote.

As ordered reported the bill has several major provisions.

1. It authorizes $542,779,000 for NOAA's atmospheric, climatic, and ocean pollution activities for fiscal year 1983 and $575,346,000 for fiscal year 1984. The fiscal year 1983 authorization is $44,093,000 more than the President's request of $498,686,000.
2. It contains substantial amendments to both the National Climate Program Act and Title II of the Marine Protection, Research, and Sanctuaries Act.
3. It adds a title on "Great Lakes Protection" to the National Ocean Pollution Planning Act.

III. Background and Need for the Legislation

The National Oceanic and Atmospheric Administration was created by Reorganization Plan No. 4 as part of the Presidential reorganization in 1970. Since its establishment NOAA has obtained most of its funding for its major programs through direct appropriations with little or no authorization or congressional oversight. Authorization actions that did occur were limited to a few specific areas of interest such as ocean pollution and ocean waste disposal. Because of this lack of a comprehensive view of NOAA and its programs, the Committee decided in 1980 to authorize those programs and activities that fall directly in the Committee's jurisdiction, namely the atmospheric, climatic, and ocean pollution activities. These program elements comprise well over one-half of NOAA's total program. In 1981, H.R. 2803, which authorized appropriations for NOAA for fiscal year 1982, passed the House as reported by the Committee on Science and Technology. However, the Senate took no action on the bill. It is the Committee's intention with H.R. 6324 to work again toward a full NOAA authorization in collaboration with the appropriate Committees of the House and Senate.

IV. EXPLANATION OF THE BILL

INTRODUCTION

The paragraphs that follow provide a title-by-title description of the purpose and content of H.R. 6324. Table I provides a summary of the appropriations which are authorized by the bill.

The first column in table I shows the level of funds appropriated to the agency in fiscal year 1982. The second column shows the level of fiscal year 1983 base funding for each category as reflected in the President's budget request. Column 3 shows fiscal year 1983 base funding including increases needed to maintain satellite programs at fiscal year 1982 levels. The fourth column shows the President's February 8, 1982 budget request for NOAA. The Committee's recommendation for fiscal year 1983 is shown in column 5, while the sixth column compares this recommendation with President Reagan's request.

TABLE I.—FISCAL YEAR 1983 NOAA AUTHORIZATION

[In thousands of dollars]

Budget category	Fiscal year—					
	1982 appropriation	1983 base	1983 base (with satellite procurement	1983 request	1983 recommendation (H.R. 6324 as amended)	Recommendation vs. request
	(1)	(2)	(3)	(4)	(5)	(6)
Marine ecosystems, ocean dumping, and Great Lakes research	19,895	19,898	19,898	9,421	17,819	8,398
Weather services/supporting research	306,016	[1] 324,004	[1] 324,004	[1] 315,730	[1] 323.860	8,130
Atmospheric research	19,378	19,764	19,764	11,564	17,764	6,200
National climate program	1,100	1,100	1,100	1,100	1,800	700
Environmental satellite services	123,699	125,744	161,208	136,543	156,208	19,665
Environmental data and information services	25,180	26,110	26,110	24,328	25,328	1,000
Total	495,268	516,620	552,084	498,686	542,779	44,093

[1] Includes $26.7 million for Aviation Weather Services for which the administration has neither requested funding nor proposed legislation regarding user fees.

Fiscal year 1982 appropriation is funding contained in 2d Continuing Resolution for fiscal year 1982.

Fiscal year 1983 is administration estimate of funds needed to continue programs at fiscal year 1982 levels.

Fiscal year 1983 base (with satellite procurement) is estimate of funds needed to continue all programs (including satellites) at fiscal year 1982 levels.

Fiscal year 1983 request is administration's fiscal year 1983 budget request of Feb. 8, 1982.

SECTION 1

This bill shall be cited as the "Atmospheric, Climatic, and Ocean Pollution Act of 1982".

TITLE I—DECLARATION OF FINDINGS AND PURPOSES

It is the Committee's intent in Title I to emphasize the vital role that the National Oceanic and Atmospheric Administration plays in the Nation's welfare, economic self-sufficiency, and national security. Section 101 states the broad goals of NOAA, which include the development and operation of national programs to—

1. manage and conserve selected marine resources for the economic and social good of the Nation;
2. monitor and predict weather and environmental conditions for the protection of life and property;
3. archive, analyze, and disseminate data on geophysical and solar-terrestrial phenomena;
4. provide basic maps, charts, surveys, and specialized data for safe navigation; and
5. provide research to advance oceanic and atmospheric science and technology for the better management of the environment and the rational use of our natural resources.

Section 102 states the purposes of the bill—

1. To designate NOAA as the lead agency for civil oceanic and atmospheric activities and programs;
2. To ensure that NOAA operates under a clear statutory charter;
3. To streamline the authorization process for NOAA; and
4. To develop a comprehensive authorization process for NOAA whereby its programs are reviewed and overseen in a coherent and holistic fashion.

TITLE II—GENERAL PROGRAM AUTHORIZATIONS AND REPORTING REQUIREMENTS

Title II of the bill provides for authorization of appropriations for the atmospheric, climatic, and ocean pollution activities of NOAA for fiscal years 1983 and 1984. The six budget categories listed in Subsection 201(a) do not correspond directly with the subactivities used by NOAA in developing their budget request. Rather, these categories were generally formed by consolidation of various line items in NOAA's budget. Further explanation is provided below.

The following paragraphs describe programs contained within each program area listed in Subsection 201(a) and the corresponding Committee action for fiscal year 1983. Funding levels for each program area in fiscal year 1984 are six percent higher than levels set for fiscal year 1983, reflecting the Committee view that programs in fiscal year 1984 should continue at fiscal year 1983 levels, with a small increase for inflation.

SECTION 201(a)(1) MARINE ECOSYSTEMS RESEARCH, OCEAN DUMPING RESEARCH, AND GREAT LAKES RESEARCH

This program area is comprised of two subactivities from NOAA's fiscal year 1983 budget submission—Marine Ecosystems Investigations and Great Lakes Research. The President's request for this program area is $9,421,000, which is $10,474,000 below the fiscal year 1983 base level of $19,898,000.

1. Program Description

In the Marine Ecosystems Investigations subactivity, programs authorized by the Committee are pursued in accordance with the mandates set forth in two public laws, the Marine Protection, Research, and Sanctuaries Act (P.L. 92-532) and the National Ocean Pollution Planning Act (P.L. 95-273).

NOAA conducts wide-ranging research and monitoring activities to assess the potential short- and long-range effects of pollution of ocean ecosystems and to provide crucial environmental information for effective use of the oceanic environment and its resources. These activities involve monitoring and predicting physical, chemical, and biological processes in estuarine and offshore areas. data generated from these investigations are disseminated to a broadly based oceans community. Additionally, they are used by Federal and State/local governments in setting guidelines for safe and sound ocean waste disposal, in planning the development of coastal areas and offshore construction projects, in mining of energy and mineral resources, and in managing the movement of waterborne commerce and transportation in U.S. waters.

NOAA requests a total of $9,421,000 in fiscal year 1983 for marine ecosystems investigations; the $6,833,000 decrease from the fiscal year 1983 base level of $16,254,000 is a result of reduction of regional projects and in ocean dumping research.

Regional projects and ocean dumping research.—Regional projects are developed in response to identified coastal problems which exceed the responsibility or capability of any single government agency.

The New York Bight was selected in fiscal year 1974 as the first coastal area for intensive study because of the magnitude and urgency of its water quality and ecological problems. Field work was completed in fiscal year 1979, and in fiscal years 1980 and 1981 the final phase of the project was completed, synthesizing information gathered during the project and applying findings to management questions. Efforts in fiscal year 1982 have been directed toward beginning full-scale field efforts in the Hudson-Raritan estuary and implementation of a long-term monitoring program in the Northeast.

A second study was initiated in Puget Sound in fiscal year 1975 to assess the effects of changing levels of pollution, to trace contaminant pathways, to determine the location, geographical extent and degree of degradation, and to ascertain the eventual fate of measured contaminants in the Puget Sound ecosystem.

Section 201, Title II, of the Marine Protection, Research, and Sanctuaries Act of 1972 directs the Secretary of Commerce to establish a comprehensive and continuing program of monitoring and research on effects of dumping harmful substances into ocean, coastal, and Great Lakes waters. NOAA initiated an ocean dumping research and monitoring program in fiscal year 1974 and established its Ocean Dumping Program Office in fiscal year 1977. Current research includes indentification of the most harmful constituents of dumped waste, pathways of waste dispersal, and the effects of dumped materials on organisms.

NOAA is proposing to decrease regional projects and ocean dumping research in fiscal year 1983 by 71 positions and $6,833,000, eliminating all projects under this category. This action would phase out most of NOAA's research on waste disposal in the marine environment. Projects to be terminated include the New York Bight and Hudson-Raritan Estuary Project, the Northeast Monitoring Program, the Puget Sound Project, and various smaller projects. The decrease would also phase out about two-thirds of NOAA's Ocean Dumping Program. NOAA would continue the remaining ocean dumping studies under the category, "Effects of Marine Environmental Alterations," discussed below.

Effects of marine environmental alterations.—Activities under this line are intended to implement the National Ocean Pollution Planning Act of 1978 (P.L. 95–273), the Long-Term Effects Research Program required by Section 202 of P.L. 92–532, and the Hazardous Materials Response Program.

As the lead Federal agency in implementing P.L. 95–273, NOAA is responsible for: (1) ensuring that the first five-year Federal plan is carried out; (2) preparing (and revising biennially) the Federal plan; (3) continuing work begun earlier in establishing a comprehensive, coordinated, and effective program of marine environmental research, development, and monitoring within NOAA; (4) administering the program of financial assistance authorized in the legislation to support investigations that meet the priorities identified in the Federal plan: and (5) ensuring timely dissemination of the results from the Federal programs to government agencies, the scientific community, and the public.

The Long-Term Effects Research Program (section 202) is carried out by various elements of NOAA and outside contractors. Current topics of concern include the role of particulate material in the water as a transport mechanisms, source, and sink for pollutants; the fates and effects of synthetic organic products and chemicals; the effects of crude and refined petroleum; and the importance of human-induced nutrients in the eutrophication of coastal waters.

A national framework has been established for a coordinated effort resulting in a better opportunity to contain damage attributable to spills of hazardous materials in ocean waters. The NOAA Hazardous Materials Response Program provides a critical element in this national framework by allowing for the rapid marshalling of the local scientific community and the deployment of equipment and instruments to provide an initial assessment of damage, and to support the Coast Guard on-scene coordinator who is responsible for Federal actions dealing with spills of hazardous materials.

There are no proposed changes in funding for effects of marine environmental alterations from the fiscal year 1983 base level of $9,421,000.

Great Lakes Research.—This research is directed toward understanding the natural properties and processes of the Great Lakes and their watersheds and toward predicting the effects of natural and maninduced changes to the region. Ultimately the program is intended to develop a sound scientific basis for management decisions associated with development an utilization of Great Lakes resources. The scope of the research includes analytical, laboratory, and field investigations into the limnological, hydrological, meteorological, and geological properties of the Lakes, their basins, and the overlying atmosphere.

Specific activities conducted under this program and carried out at the Great Lakes Environmental Research Laboratory in Ann Arbor, Michigan, include: (1) the measurement, analysis, and prediction of physical phenomena such as currents, waves, ice, lake levels, river flows, and metorological interactions; (2) the investigation of short-and long-term effects of human, agricultural, and industrial wastes on the aquatic life, especially in the nearshore zone of maximum and competing use; (3) the development of applied environmental service tools such as resource atlases and engineering models; and (4) participation by NOAA representatives in regional and U.S./Canadian organizations which jointly address problems of the Great Lakes.

NOAA requests a decrease of $3,644,000 and 63 positions, associateed with its proposed closing of the Great Lakes Environmental Research Laboratory at Ann Arbor, Michigan, eliminating NOAA's research programs in the Great Lakes region. The closing of this labortatory would (1) eliminate NOAA's research on ice, wind, waves, shore erosion, and long-term effects of man-induced changes in the Great Lakes; and (2) terminate NOAA's participation on several international and interagency boards and commissions which provide scientific advice and assistance on environmental issues. It is expected that some research programs will continue at universities in the area where Great Lakes research is currently pursued. While the current NOAA's research program serves a large region of the country, it is NOAA's contention that program is less essential to the agency's mission than other activities which ought to be continued.

2. Committee Action

The budget request for Marine Ecosystems Research, Ocean Dumping Research, and Great Lakes Research is $9,421,000, or $10,477,000 below the fiscal year 1983 base amount. The Committee recommends that $17,819,000, or $8,398,000 above the Administration request, be authorized for this category and that the $8,398,000 be allocated as follows: a $2,462,000 increase for ocean dumping studies; a $1,532,000 increase for New York Bight-Hudson-Raritan studies; a $460,000 increase for the Office of Marine Pollution Assessment's portion of the Northeast Monitoring Program; a $3,644,000 increase for the Great Lakes Environmental Research Laboratory; a $500,000 increase for the New York sewage sludge study mandated by Section 503 of this bill; and a $200,000 decrease in the National Marine Pollution Program Office.

The Committee recommends decreasing funding for the National Marine Pollution Program Office from approximately $700,000 to $500,000. The General Accounting Office, in reviewing the effectiveness of this office, concluded that its major contribution has been to provide an inventory of Federal research projects in ocean pollution. The Office has had, according to GAO, little effect upon the establishment of priorities in Federal ocean pollution research. Accordingly, the Committees believes that funding for this Office can be reduced until such time as it more effectively fulfills the mandate of the National Ocean Pollution Planning Act of 1978.

Committees views on other projects conducted under this category are provided elsewhere in this report in the discussions of Title IV of Title V of H.R. 6324.

SECTION 201(a)(2) WEATHER SERVICES AND SUPPORTING RESEARCH

Weather services and supporting research are conducted by NOAA under three of its current budget activities: basic environmental services, public forecast and warning services, and specialized environmental services. Within the agency these activities are performed through the National Weather Service (NWS) and the Environmental Research Laboratories (ERL). The total NOAA request for fiscal year 1983 for weather services and supporting research is $315,730,000, a net decrease of $8,274,000 from the fiscal year 1983 base level of $324,004,000. These totals do not include the Administration's request of $1,100,000 for the National Climate Program Office. The authorization for this Office is contained in Section 201(a)(4). (In addition, a further reduction of $26,700,000 could be achieved if legislation were enacted permitting funding of aviation weather services from the Airport and Airway Trust Fund. See discussion below under specialized environmental services for more details on proposed funding of aviation weather services.)

NOAA's programs and proposed funding for weather services and supporting research are discussed below under the three existing budget activities which comprise these programs.

1. Program Description

a. Basic environmental services

The basic environmental services of NOAA provide the fundamental network of weather observations, communications, central computer analyses and predictions, and maintenance services that support all weather forecasts and warnings for the general public, specific segments of the Nation's economy, and the national defense. For fiscal year 1983, NOAA requests $166,437,000, a decrease of $3,868,000 from the fiscal year 1983 base level of $170,305,000 for this activity. Proposed decreases would be realized from reduction of partial funding of 45 Weather Services Offices (WSOs) that are scheduled to be closed (–$2,123,000), alteration of the phased approach to development and acquisition of the Next Generation Weather RADAR (NEXRAD) (–$1,000,000), and closure of the Southern Region headquarters of the National Weather Service (NWS) (–$655,000).

Basic observations subactivity.—The basic observations subactivity provides surface, marine, upper air, radar and satellite observations of the atmosphere and oceans in sufficient density, frequency, and quality to serve as the foundation for NOAA's forecast, warning, and environmental quality assessment services, domestic and foreign government agencies, and other domestic users. Observations of temperature, atmospheric pressure, humidity, wind speed and direction, and other weather elements, along with polar-orbiting satellite observations, provide the global data needed for preparation of longer range numerical weather forecasts. Radar and the Geostationary Operational Environmental Satellite (GOES) provide real-time observations of short-term changes in the development and movement of weather systems (winter storms, hurricanes, squall lines, and tornadoes) essential to a timely and reliable short-term forecast and warning service to the public.

Under this subactivity NOAA conducts research to develop groundbased and satellite techniques for the remote measurement of critical meterological and oceanographic parameters required by research and service programs. Design, testing, and evaluation of new remote sensing techniques will continue, and instruments will be developed to measure three-dimensional fields of velocity, temperature, humidity, aerosols, and precipitation. Development of techniques for remote measurement of ocean currents and surface waves will also continue. New processing techniques to determine cloud height, cloud amount, and ceiling have been developed and are undergoing feasibility studies, and forward scatter techniques for determining visibility are being investigated. Testing and evaluation will continue on the Prototype Regional Observing and Forecasting System (PROFS), which integrates recent advances in observational techniques, data processing and display, communications, modeling, and dissemination of information to the public. PROFS will complete a systems design to improve weather information and forecasts (0-12 hours) for major urban centers.

In response to Administration efforts to reduce Federal employment and expenditures, NOAA proposes to consolidate its weather station network by closing 25 full-time and 20 part-time Weather Service Offices (WSOs) and by closing the NWS Southern Region Headquarters in Fort Worth, Texas. The stations proposed for closure are considered to be of relatively low priority in the provision of services and warnings to the public, and closing the Southern Region Headquarters will not directly affect weather services. As a result of these curtailments, there would be a total NWS reduction of 193 positions and $4,062,000, although these reductions are apportioned between basic environmental services and public forecast and warning services. Within the basic environmental services, these changes would result in decreases of $2,368,000 and 138 positions in land surface observations, $380,000 and 12 positions in upper air observations, and $30,000 and 1 position in local display of satellite data.

NOAA proposes to decrease the Next Generation Weather Radar (NEXRAD) program by $1,000,000 in fiscal year 1983, from $5,050,000 to $4,050,000, by altering the phased approach to development and acquisition of the NEXRAD network. This proposed reduction would eliminate the parallel prototype demonstration for verification and validation of system engineering and design efforts. This reduction would delay the planned completion of the NEXRAD system to replace the existing weather radar network from 1991 to 1994.

The total effect of the funding reductions discussed above for basic observations would be a decreae of $3,778,000 from the fiscal year 1983 base, with a proposed funding level of $79,240,000.

Basic communications subactivity.—This subactivity provides a communications network for the collection and distribution of meteorological and environmental data required in NOAA's weather forecast and warning services to the Nation. Data are transmitted over leased lines, used in conjunction with teletypewriters, telewriters, facsimile recorders and terminals, telephones, electronic displays, and highspeed data/graphic links.

The Radar Report and Warning Coordination (RAWARC) system distributes radar data, severe weather warings, hydrologic reports and warnings, and general weather information not available on scheduled national circuits. Five circuits, connecting 250 field offices, provide direct coordination of hazardous weather warnings. The National Facsimile System distributes graphic materials from the National Meteorological Center to about 300 NOAA field offices, 560 Department of Defense and other Government users, and 625 public users; the Digital Facsimile System distributes specialized guidance materials to Weather Service Forecast Offices; the Tropical Regional Analysis Facsimile System distributes analyses and charts for Hurricane Forecast centers along the Atlantic and Gulf Coast; the Geostationary Operational Environmental Satellite Facsimile System distributes high-resolution satellite pictures to the Weather Service Forecast Offices; and a Radar Facsimile system collects and distributes data obtained from Air Route Traffic Control Center radars to a number of Weather Service Offices and to the National Severe Storm Forecast Center, where composite charts of radar information for the entire United States are prepared and transmitted. In addition to NOAA offices, other Government agencies, airlines, and public and private subscribers are served by all of these systems.

The World Weather Watch system provides an international program of mutual cooperation for exchange of observational data, using a system of communications circuits which include landline, satellite, and radio facilities. Circuits currently serving the World Meteorological Center in Washington, D.C., collect data from the Far East through Tokyo; from Europe through Bracknell, England; from Canada through Toronto; and from South and Central America and the Caribbean area through terminals in Brazil, Argentina, Cuba and other islands of the Caribbean, Mexico, and nations of Central America.

There are no proposed increases or decreases in this subactivity to the fiscal year 1983 base level of $16,787,000.

Basic weather analysis and predictions subactivity.—The purposes of this subactivity are to issue timely and accurate forecast guidance products for use by NOAA, other Federal agencies, and the public and to provide the basis for coordinated efforts in national and international activities related to climate research. Observations from weather stations worldwide are transmitted to the National Meteorological Center and processed, using computers and mathematical models, to produce analyses and predictions of general global weather conditions. These predictions include long-range forecasts for use by field offices in preparation of State, regional, and local forecasts. To improve these services, NOAA conducts continuing research to develop more precise mathematical models used for objective forecasts, Such research is performed at the National Meteorological Center and at the Geophysical Fluid Dynamics Laboratory in Princeton, New Jersey, using advanced digital computers and global data from the oceans and all levels of the atmosphere.

NOAA does not propose any change in funding from the fiscal year 1983 base level of $33,331,000 for this subactivity.

Maintenance and repair subactivity.—The purposes of this subactivity are to provide maintenance, rehabilitation, and relocation, as required, of facilities and equipment of the National Weather Service. Currently NOAA operates 44 Weather Service Forecast Offices, 203 Weather Service Offices, 13 River Forecast Offices, and 38 Observatories. Facilities maintained include offices, balloon inflation shelters, radomes, towers, standby-power generators, and 84 Government housing units in remote areas.

Continuing progress in automation of weather observations, communications, and weather information dissemination makes the forecast and warning system more dependent on sophisticated electronic equipment; hence, effective maintenance and repair of equipment and the availability of standby power are essential to avoid disruption in services.

As a result of the proposed closing of the NWS Southern Region Headquarters, the maintenance and repair subactivity funding for fiscal year 1983 would be decreased by $90,000 below the 1983 base level, with a 1983 estimate of $37,079,000. This closing would also result in a decrease of 2 positions for this subactivity.

b. Public forecast and warning services

The public forecast and warning services activity provides weather services to the general public; hurricane and tornado warnings and river and flood forecasts to all segments of the population, industry, and govenment; weather and sea predictions for marine interests; and research to improve these services. An increase in fiscal year 1983 of $1,600,000 in this program would fund a satellite weather information system. Decreases would reduce partial funding for 45 Weather Service Offices and the NWS Southern Region Headquarters, which are proposed to be closed during the fiscal year. The net request is $108,408,000, which is $829,000 above the fiscal year 1983 base amount of $107,579,000.

Public weather services subactivity.—The public weather services subactivity, through NOAA's Weather Service Offices and Weather Service Forecast Offices, attempts to provide timely and accurate weather forecast, warnings, and planning information to meet needs of the general public. Forecast guidance from the National Meteorological Center provides the basis for advance warnings of adverse environmental conditions such as tornados, flash floods, heavy rains, blizzards, heavy snow, cold waves, ice storms, high winds, and sand storms.

The core of the forecast preparation program is formed by the 44 Weather Service Forecast Offices, each of which prepares weather and flash flood forecasts, advisories, and warnings for the area for which it is responsible. Weather Service Offices serve the public in 203 local areas by providing weather and flood reports, advisories, general weather information, local climatological summaries, and forecasts and warnings. Local forecasts and warnings of adverse weather conditions are distributed to the public by NOAA Weather Radio and to the news media by the NOAA Weather Wire Service. In cooperation with telephone companies, NOAA provides weather information over large-volume recording systems, which receive over one billion calls annually.

Through the Automation of Field Operations and Services (AFOS) program, NOAA is attempting to apply modern technology and automation techniques to day-to-day weather service operations. This program is intended to reduce the response time between the detection of hazardous conditions and the issuance of warnings to the public, to improve and extend warning and forecast services, and to increase productivity of field personnel required to provide weather services. AFOS involves the replacement of outmoded communications, teletypewriter, and facsimile equipment with modern minicomputer equipment at about 200 field offices and National Centers. The first AFOS equipmnet was installed at a field site in May 1978, and the last was installed in June 1981. Each of the 4 regional loops will be operational by late 1982. After the initial system is operational, programmed upgrades will be introduced and those stations which do not have AFOS will be equipped to interface with those with the AFOS system. All capabilities are expected to be operational by late 1984.

NOAA is requesting an increase of two positions and $1,600,000 to procure, implement, and maintain satellite data processing and display systems at field forecast offices and to perform an evaluation of potential improvements to numerical weather predictions at the National Meteorological Center. The proposed Satellite Weather Information System (SWIS) program is intended to provide for installation of image processing and display systems for assimilation of satellite, radar, and conventional data in field offices. NOAA expects to procure and install a total of 52 units: 18 in fiscal year 1983 and 17 each in fiscal years 1984 and 1985, with a recurring cost of $350,000 starting in fiscal year 1986 to support system operations, maintenance, training, and management.

As a result of the proposed closing of 25 full-time and 20 part-time Weather Service Offices and the closing of the NWS Southern Region Headquarters, the public weather services subactivity would undergo decreases of 25 positions and $701,000 in funding from the fiscal year 1983 base level. The total net change in funding for this subactivity would be an increase of $899,000 above the fiscal year 1983 base, so that the total requested fiscal year funding is $64,764,000.

Marine prediction services subactivity.—The purpose of this subactivity is to provide the Nation's maritime industry, coastal communities, the general public, and governmental agencies with timely and accurate marine and oceangraphic forecasts, warnings, and other advisory information. This program contributes to the safety and efficiency of marine operations by providing warnings of severe storms and other marine hazards and observations and forecasts of ice conditions in selected northern harbors, the Great Lakes, and polar sea areas. Marine forecasts are broadcast continuously over NOAA Weather Radio stations and by Coast Guard, Navy, and commercial radio stations. Descriptions of ocean frontal systems and regional sea surface temperature analyses are provided routinely for shipping and fisheries interests and are also used to improve marine meteorological forecasts and warnings. Forecasts for the Great Lakes and coastal waters are prepared by

24 Weather Service Forecast Offices, eight of which also provide services for designated offshore areas. The joint NOAA/Navy Ice Forecasting Center at Suitland, Maryland, provides sea ice forecasting guidance materials and services for the Great Lakes and for the entire Alaska area.

By international agreement, the United States is responsible for providing marine weather forecasts and warnings for the western North Atlantic Ocean and for the central and eastern North Pacific Ocean. A tsunami (seismic wave) warning service is provided for the entire Pacific basin.

Research is directed toward understanding the interaction between the atmosphere and the oceans and toward development of new and improved prediction techniques for oceanographic and marine weather conditions of concern to marine and coastal activities. Ocean climate research is conducted to understand the principal processes and mechanisms through which the oceans influence global and regional interannual climatic changes.

The proposed closing of 25 full-time Weather Service Offices would result in a decrease of two positions and $70,000 in this subactivity. The requested funding for marine prediction services in fiscal year 1983 is $11,435,000.

Hurricane and tornado warning services subactivity.—The purpose of this subactivity is to reduce loss of life, human suffering, and economic losses through provision of timely and accurate warnings of hurricanes and tornadoes and through improved public response to those warnings. Watches and warnings are given immediate distribution through all available means of communications, with heavy reliance upon radio and television to transmit them to the public. NOAA conducts a program to assist communities in preparedness planning to ensure that the public understands the warning terminology and takes proper protective measures. NOAA also conducts a continuing research program to increase understanding of these severe storms and to develop better methods of detecting their locations and predicting future movements and intensities.

The National Hurricane Center (NHC) at Miami, Florida, prepares all analyses of hurricane position, intensity, and movement for the Atlantic, Caribbean, and Gulf of Mexico and issues advisories to the general public and the military. Hurricane Warning Offices at Boston, Washington, D.C., New Orleans, and San Juan coordinate with the HNC in the issuance of warnings in their respective areas of responsibility. Hurricane Centers at San Francisco and Honolulu provide services for the eastern and central North Pacific similar to those performed by the NHC. Weather Service Forecast Offices and Weather Service Offices supplement advisories with statements of probable local hurricane effects and disseminate the warnings to local interests.

The National Severe Storm Forecast Center at Kansas City, Missouri, is responsible for issuing severe thunderstorm and tornado watches for the United States. The Center designates watch areas with high likelihood for severe thunderstorms or tornadoes, and Weather Service Forecast Offices and Weather Service Offices originate public tornado warnings on the basis of actual sightings or radar indications.

The Community Preparedness Service program provides scientific information and technical assistance to communities for planning responses to warnings of tornadoes, hurricanes, floods, flash floods, and other natural disasters. Carried out primarily by meteorologists at Weather Service Forecast Offices, who participate with the Federal Emergency Management Agency (FEMA), the program recruits and trains severe storm spotters, designs and assists communities to establish flash flood warning systems, provides hazard analysis data for emergency planning, develops and updates preparedness programs and evacuation plans, and enlists the cooperation of the news media for rapid dissemination of warnings.

For fiscal year 1983, NOAA does not propose any funding changes from the base level of $15,967,000 for hurricane and tornado warning services.

River and flood forecasts and warning services subactivity.—This subactivity provides short- and long-range forecasts for large-scale-river flooding, furnishes guidance information on potential flash floods, and assists communities in the implementation of local flash-flood-warning systems in order to minimize loss of life, property damage, and personal hardship. Forecasts of river stage and flow are prepared for use by those involved in river transportation, river and riverside construction, industry, power generation, water supply, water quality management, and recreation. Research is directed toward advancement of flood-forecasting techniques; improving the use of remotely sensed data obtained from airborne, radar, and satellite systems; developing procedure for environmental-hazard forecasts; and preparation of materials on flood frequencies.

River level and flow forecasts are based on reports from about 8,000 precipitation and river guage stations. Most of these observations are made manually by private citizens; however, about 850 are semiautomated and are monitored by Weather Service personnel over telephone or radio. Available funds now support the operation and maintenance of about 500 Automatic Hydrologic Observing Systems, which are interrogated by computers over telephone or by NOAA's GOES satellite. These data are augmented by manually digitized radar data in areas with non-recording rain guages. New airborne technology employing a passive gamma radiation detector to estimate the water quivalent in snow packs is being used to collect snowmelt flood forecast data on major rivers in South Dakota, North Dakota, Minnesota, and the Souris River Basin in Canada. Under a fiscal year 1979 initiative the Integrated Flood Observing and Warning System (INFLOWS), an automated system supporting local flash flood warnings, has been installed in 12 flood-prone counties in Kentucky, West Virginia, and Virginia, and a National Heavy Precipitation Unit has been organized to provide centralized forecasting support to the program. INFLOWS is to be installed in additional high-risk counties in Virginia, West Virginia, Kentucky, Pennsylvania, and Tennessee. The Appalachian Regional Commission and the cooperating States have joined with the Federal Government to fund this program.

Thirteen River Forecast Centers (RFC's) currently provide services covering all States except Hawaii. The RFC's use computers to assist in processing meteorological and hydrological data and in preparing river forecasts and warnings. In a number of locations, NOAA has developed techniqies which allow local officials to make flash flood forecasts using simple procedures

In fiscal yare 1983, NOAA recommends no change from the base funding level of $16,242,000 for the river and flood forecasts and warning services subactivity.

c. Specialized environmental services

The specialized environmental services activity provides environmental services to the agricultural and aviation industries; weather forecasting services to support wildfire prevention and control, wildlands management control, control of air pollution, and management of air quality; and information on solar activities and conditions in near space to civilian and military users. A recommended increase of $300,000 would support research in acid rain. The following decreases are recommended: $800,000 in the fire weather program; $100,000,000 in the agricultural weather program; $350,000 in the aviation weather forecast program; $209,000 in the fruit frost forecast program; $51,000 in partial funding for 20 Weather Service Offices proposed to be closed; and $3,100,000 in the solar terrestrial services program. The fiscal years 1983 request of $40,885,000 is $5,235,000 less than the fiscal year 1983 base level of $46,120,000. A proposal for later transmittal to recover the full cost of the aviation weather program through a reimbursement from the Federal Aviation Administratin would decrease direct funding for this service by $26,700,000.

Air pollution and fire weather services subactivity.—This subactivity provides the meteorological information required by Federal, State, regional or local agency programs concerned with wildfire prevention and control, forest and range management, or management of environmental quality through the control of air pollutant emissions. NOAA provides meteorological support for the national air pollution control effort of the Environmental Protection Agency and for the forest and land management programs of the U.S. Forest Service, the Bureau of Land Management, and other agencies of the Departments of Agriculture and of the Interior, as well as State natural resource and forestry departments.

As part of a new acid rain research program, NOAA is developing equipment for measuring dry deposition of acidic materials, taking measurements to understand the mechanisms of cloud capture and deposition of acidic materials, and studying natural sources of acidic materials. NOAA requests an increase of $300,000 and one position to augment its research program on the acid rain phenomenon, the increase being intended to fund a limited number of investigations of chemical transformation and removal processes.

Fifty NOAA Weather Service Offices and Weather Service Forecast Offices provide detailed forecasts of air temperature, wind speed and direction, humidity, timber and brush moisture, precipitation, and thunderstorm activity in connection with fire weather services. Special forecasts and advisories are transmitted to land management agencies in support of fire control and suppression operations, prescribed burning, disease and insect control, smoke managment, and reforestation.

NOAA proposes decreases in the fire weather program through elimination of 24 positions and funding reductions of $825,000 by closing five Weather Service Offices and reducing staff at 15 other Weather Service Offices. These reductions would eliminate applied weather forecasts and advisories for prescribed burns and smoke management; and for forestry and land management operations. Half of the mobile field units, which provide on-site forecast and advisory services at wildfires, would be eliminated.

As a result of the proposed funding changes, there would be a net decrease in air pollution and fire weather services of $525,000 from the fiscal year 1983 base level. The total recommended funding level for these services for fiscal year 1983 is $5,011,000 (consisting of $2,469,000 for air pollution weather services and $2,542 for fire weather services).

Agricultural weather services subactivity.—The purposes of the Agricultural Weather Service is to help farmers and ranchers to optimize food and fiber production through provision of specialized agricultural weather forecasts, warnings, and advisory services. In order to provide improved agricultural weather services, NOAA is attempting to refine techniques for forecasting such weather elements as soil temperature and moisture, amounts and duration of dew, and minimum temperatures. The present agricultural weather service provides, in about one-third of the country, specialized local observations for farming areas, technical studies in weather-crop relationships, advisories to extension services and agricultural businessmen, and weather forecasts tailored to current farming operations. In those areas where services are available, NOAA Agricultural Weather Service Centers (AWSC) work directly with State extension services and farmers, the AWSC meteorologists maintaining close liaison with the Weather Service Forecast Offices which prepare applied weather forecasts and warnings tailored to meet farmers' operational needs. Four AWSCs each serve three to five adjoining States, and in six States outside these service areas NOAA maintains cooperative agreements with universities to perform AWSC-type functions.

NOAA also provides support to a multi-agency program for increased use of remote sensing to support agricultural needs. This program, called Agriculture Resources Inventory and Survey through Remote Sensing (A g RISTARS), is sponsored by NOAA, the Departments of Agriculture and the Interior, the National Aeronautics and Space Administration, and the Agency for International Development, and provides information on (1) early warning of changes affecting production and quality of commodities and renewable resources and (2) commodity production forecasts.

NOAA proposes a major reduction in agricultural weather services, with decreases of 43 positions and $1,260,000 in funding from the fiscal year 1983 base level. This curtailment is in response to Administration efforts aimed at reduction of Federal employment and expenditures and is also intended to encourage greater participation of the private meteorological sector in such services where possible. Of the proposed decrease, 38 positions and $1,051,000 are associated with elimination of the agricultural weather program through closing the four Agricultural Weather Service Centers and three Weather Service Offices and by reducing staffing at four other Weather Service Offices, four Weather Service Forecast Offices, and the NWS Headquarters. Services that apply weather forecasts, warnings, and advisories to specific farming and ranching operations will be discontinued. The NWS will continue to provide generalized public service weather forecasts to support agricultural operations, and funds will be retained to continue observations at key points through a mix of automatic equipment, telephone answering equipment, and contract observations.

The requested funding for fiscal year 1983 for the remaining portions of the agricultural weather forecasts and warnings subactivity is $3,518,000.

Aviation weather services subactivity.—The NOAA aviation weather program furnishes specialized weather observations, forecasts, warnings, advisories, and pilot weather briefings to promote the safety and efficiency of air operations. These services are provided according to recommendations of the Federal Aviation Administraton (FAA) under provisions of the Federal Aviation Act of 1958 and in accordance with International Civil Aviation Organization agreements. Surface weather observations are taken by NOAA staff at 222 facilities, by the FAA at 345 airports, and by private industry under cooperative agreements at 320 airports and at 110 automated stations. Special observations used in the preparation of aviation weather forecasts and warnings, pilot weather briefings, and support of airport take-offs and landings include weather elements not required for general weather forecasting.

Nationwide forecast guidance for domestic aviation is prepared by the National Meteorological Center, the National Hurricane Center, and the National Severe Storm Forecast Center; in addition, 44 Weather Service Forecast Offices prepare terminal forecasts for airports within their areas of responsibility, covering 24-hour periods three times daily for about 500 airports. Also, 330 route-oriented forecasts are prepared three times daily for broadcast by FAA personnel. The National Aviation Forecast Unit at the National Severe Storms Center prepares in-flight weather advisories for pilots of potentially hazardous weather conditions for the 48 contiguous States, as do Weather Service Forecast Offices in Honolulu and Fairbanks for their respective areas of responsibility. The National Meteorological Center (NMC) prepares forecasts of winds and temperatures for eleven levels aloft twice daily for 125 specific locations, and the NMC and six Weather Service Offices are responsible for preparation of international flight documentation forecasts and warnings in accordance with procedures adopted by the International Civil Aviation Organization.

In a cooperative program with the FAA, weather information is disseminated to pilots with a special FAA teletypewriter circuit and by in-person, telephone, and mass briefings. NOAA conducts about five percent of the 19 million annual pilot briefings, and pilot weather briefings for domestic flights are available at 238 NOAA facilities in the 50 States. Pilots are also assisted in flight planning through NOAA's daily 15-minute A.M. Weather broadcasts over 200 Public Broadcast Service stations. In addition, forecasts are furnished to the FAA for mass dissemination over the Pilots Automatic Telephone Weather Answering Service, and international flights leaving the United States are provided with forecast at a number of facilities. To improve flight safety, at 21 FAA Air Route Traffic

Control Centers, meteorologists provide air trafic controllers with current and forecast weather conditions.

Research is conducted to improve automated observations of ceiling, visibility, and present weather conditions. Using laser technology, NOAA has been developing a present weather identifier, a sensor to determine automatically the amount and character of precipitation, and a technique to ascertain important cloud information. The NWS has assisted the FAA in developing a demonstration model of a system to provide wind, temperature, dewpoint, and altimeter information automatically to pilots in the vicinity of an airport. Terminal forecasting research is focussed on providing objective guidance to the Weather Service Fotecast Offices in ways that increase efficiency and effectiveness of forecasters' decisionmaking process. Meeting the large increase in demand for aviation weather services necessitates automation of aviation forecast products, and research and development efforts in support of this concept are proceeding in the areas of aviation terminal and route forecasting.

As a portion of its overall effort to reduce Federal employment and expenditures, NOAA proposes decreases of 18 positions and $350,000 in funding through elimination of avaition area forecasts at the 12 Weather Service Forecast Offices currently responsible for this activity. The basic requirement for aviation weather preflight information would be met through an automated, more general, area forecast. The forecast staff at the National Severe Stroms Forecast Center will be reorganized and augmented to assume the responsibility for centralization of national aviation weather information.

NOAA also requests a decrease of 708 positions and $26,700,000 to be offset by an increase in its reimbursible program to reflect the Administration desire to fund the aviation weather services program from the Airport and Airway Trust Fund. This proposal is part of the Administration effort to impose or increase user fees where a service provides special benefits to identifiable recipients above and beyond those which accrue to the general public. Legislation would be required to broaden the authorized uses of this fund to finance the NWS aviation weather program; however, this change would not increase the total funds available to the aviation weather program of NWS, the anticipated cost of which in fiscal year 1983 is estimated at $26,700,000 (NOAA supports enactment of HR. 2930, one provision of which would permit funding of avaition weather servcies from the Airport and Airway Trust fund.)

Upper air and space services subactivity.—The Space Environmental Services Center (SESC) at Boulder, Colorado, operated jointly by NOAA and the U.S. Air Force Air Weather Service, is both the national and the international focus for operational space and upper atmosphere information. SESC maintains a real-time data base for current information on the state of the sun, the interplanetary medium, and the near-earth space environment, available to Government agencies, industries, universities, foreign governments, and other uses. SESC also provides users with forecasts and warnings of sudden solar disturbances and their effects on human activities.

Solar data are obtained continuously be SESC from a worldwide, joint NOAA/Department of Defense (DOD) network of six solar optical and three radio observatories. Ionospheric, magnetic, and radar data from ground observatories are transmitted to SESC through the global DOD communications network. Data collected by the GOES and polar-orbiting satellites are received at the SESC, and satellite data are exchanged with the U.S.S.R. Major applications for solar forecasts and warnings are (1) public utilities, where telephone circuits and high voltage transmission may be affected; (2) transportation, which may experience comunications interruptions, especially in polar regions; (3) satellite operations; (4) research; (5) defense; and (6) geophysical exploration activities, which depend on knowledge of the earth's magnetic field.

Research at NOAA's Space Environmental Laboratory (SEL) is directed toward understanding and modeling the fundamental physical processes responsible for energy release from the sun's surface during solar distrubances; the propagation and modification of this energy through interplanetary space to the near-earth environment; the transfer of this energy into the earth's magnetic field; and the behavior and subsequent effects of this energy within the magnetosphere and the upper atmosphers. The goal of this research is the development of a numerical model which can predict the timing and geographic distribution of the effects of solar disturbances. Research in this program is also conducted by NOAA's Aeronomy Laboratory on the measurement, understanding, and modelling of the physical, chemical, and dynamic processes of the stratosphere and surrounding layers of the upper and lower atmosphere, including possible effects of the introduction of man-made pollutants into the stratosphere. This program complements NOAA's program on the global monitoring of climatic change, in which effects of long-term changes in the atmosphere are monitored from the ground.

NOAA is proposing to reduce the upper air and space services subactivity by 34 positions and $3,100,000 as part of the administration's budget reduction effort. The proposed decrease will (1) eliminate NOAA's space environment research and all space environment services except the archiving of data, (2) reduce funding for upgrading the Solor Environmental Laboratory Data Acquisition and Display System, and (3) provide for the transfer of NOAA's space environment services to some other Federal agency willing to provide the additional funds necessary to permit a minimal level of operation. with the proposed reductions, the requested funding level for fiscal year 1983 for the remaining activities under the upper air and space services is $5,656,000.

2. Committee Actions

The budget request for Weather Services and Supporting Research is $315,730,000, or $8,274,000 below the fiscal year 1983 base amount. This request includes $26,700,000 for aviation weather services which the Administration hopes to fund by means of the FAA Airport and Airway Trust Fund. Since at this time the necessary legislative changes have not occurred which would enable aviation weather services to be funded by this mechanism and since the Administration is not proposing any diminution in these services, $26,700,000 for aviation weather services have been included in both the fiscal year 1983 base figures and in the Administration's fiscal year 1983 request for this category.

The Committee recommends that $323,860,000, or $8,130,000 above the Administration request, be authorized for this category and that the $8,130,000 be allocated as follows: a $1,000,000 increase for next generation radar (NEXRAD); a $825,000 increase for fire weather services; a $3,639,000 increase to maintain 45 Weather Service Offices and the Southern Regional Headquarters which were proposed for closure in the fiscal year 1983 budget request; a $927,000 increase to maintain 18 Weather Service Offices proposed for closure in fiscal year 1982: a $1,260,000 increase for agricultural weather services; a $200,000 increase to maintain fruit frost forecasts proposed for elimination in fiscal year 1982; a $2,600,000 increase for the Space Environment Laboratory; a $1,300,000 decrease in the AFOS program; and a $1,021,000 increase in hurricane reconnaissance.

SECTION 201(a) (3) ATMOSPHERIC RESEARCH

Atomospheric research activities authorized under this section are found in three activities listed in NOAA's budget request—Global Monitoring of Climatic Change, Weather Modification, and International Projects (Global Atmospheric Research program/World Climate Research program). The total NOAA request for fiscal year 1983 for atmospheric research is $11,564,000, a net decrease of $8,200,000 from the fiscal year 1983 base level of $19,764,000.

NOAA's programs and proposed funding for atmospheric research are discussed below under the three existing budget activities which comprise these programs.

1. Program Description

a. Global monitoring of climatic change

The Global Monitoring of Climatic Change (GMCC) program is conducted to: (1) measure and analyze global concentrations of carbon dioxide, ozone, fluorocarbons and other important atmospheric trace gases; (2) determine global concentrations, chemical constituents, and optical properties of atmospheric particles; (3) correlate the established trends and changes in these atmospheric variables to changes in weather and climate (on scales of 1 to 10 years); and (4) establish complete global budgets (source and sinks) for significant atmospheric trace constituents and predict likely effects on global weather and climate of modifications and changes in these budgets.

The possibility exists that society may be changing the climate through its own actions. The rapid expansion and use of a broad spectrum of technologies is introducing large quantities of effluents and emissions into the natural environment. Basic information is needed to evaluate the extent to which man may be inducing measurable, large-scale changes in weather and climate and the extent to which natural phenomena such as volcanic eruptions may be contributing to climatic change and variability of climate.

Observations.—Baseline monitoring networks are situated in locations with relatively clean air which are expected to remain environmentally unchanged, insofar as land use practices are concerned, for some time to come. At each station, measurements are made of atmospheric constituents such as carbon dioxide, oxides of nitrogen, ozone, ammonia, fluorocarbons, condensation and cloud freezing nuclei, atmospheric dust content, solar radiation, and electrical conductivity. The four baseline stations are located at Mauna Loa, Hawaii; Point Barrow, Alaska; the South Pole; and American Samoa.

Data analysis.—Research is conducted on the increasing atmospheric carbon dioxide concentrations attributable in part to such activities as deforestation and the combustion of fossil fuels, with primary emphasis on the partitioning of carbon dioxide and radiocarbon isotopes among the major global carbon reservoirs. Global models are being developed to predict future carbon dioxide levels in the atmospheric and the world ocean, and to determine the significance of the role these levels might play in inducing future climatic change and varibility. Studies are also carried out on variations in the Sun's energy output, since there is mounting evidence that indices of solar variation may be statistically correlated with certain weather and climate changes. Other analyses are designed to aid in separating the changes occuring from regional and local activities from the more gradual globally averaged changes.

Base funds amounting to $4,333,000 are requested to carry out GMCC activities in fiscal year 1983.

b. Weather modification

The weather modification research program conducted by NOAA is aimed at developing a sound scientific basis for practical weather modification through theoretical studies, laboratory investigations, computer modelling of severe storms and convective cloud processes, and confirmation of experimental field projects. The current effort is cencentrated in those areas: (1) the development of technologies for the modification of severe storms; (2) the modification of convective clouds to increase rainfall; and (3) research on the physics and dynamics of cloud and precipitation processes. NOAA also collects information on all federally and non-federally sponsored weather modification activities in the United States and makes this information available to the public, in accordance with Public Law 92-205.

In fiscal year 1983 NOAA has requested a total of $4,059,000 for its weather modification activities. This request is $5,979,000 under the fiscal year 1983 base and $5,712,000 under the funding currently available for fiscal year 1982.

Hurricane modification.—In project STORMFURY, NOAA is attempting to determine the feasibility of altering the dynamics of hurricanes through cloud seeding in an effort to moderate the destructive forces of hurricane winds. Theoretical considerations, verified by numerical models, indicate that seeding should lead to reduction of maximum wind velocity through expansion of the diameter of the storm's eyewall. Studies show that a 15 percent reduction in wind speeds could yield a savings in property loss damage of approximately $100 million annually. Results of hurricane seeding to date are encouraging, although experiments have been hampered by the scarcity of Atlantic storms meeting acceptable criteria for seeding. Under present plans, research flights will be curtailed during the summers of 1983 through 1985 such that NOAA will be unable to gather information on storms that would be suitable for future seeding experiments. No further seeding experiments are planned. Meanwhile, a program of storm modelling is underway to learn more about the structure and dynamics of hurricanes. Cloud physics data from tropical storms and radar and satellite data will support these numerical modelling efforts, and computer simulation of hurricane modification will aid in the design and evaluation of future field experiments. The hurricane modification subactivity is zero-funded in the fiscal year 1983 budget request. In addition to eliminating the Stormfury hurricane modification program, NOAA is also proposing to terminate its simulation of hurricanes by numerical modeling in fiscal year 1983.

Modification of other severe storms.—The objective of this program is to improve the prediction of mesoscale weather phenomena and to test the feasibility of modifying such weather as severe convective systems and precipitation in mountainous regions, through theoretical studies field experiments, and numerical models. Diagnostic studies of severe weather events, using data from aircraft, radar, satellites, and the National Weather Service networks, assist in developing and verifying these models. This subactivity is zero-funded in the fiscal year 1983 budget request, thus eliminating most research in mesoscale weather systems, cloud physics, and boundary layer dynamics.

Modification of convective clouds.—The objective of this program is to develop a convective cloud modification technology that might ultimately be used operationally by State and local agencies to augment water supplies and to benefit agiculture. Results of experiments involving the seeding of individual cumulus clouds in southern Florida have shown a substantial increase in rainfall, and additional observations and studies have indicated the possibility of inducing greater precipitation by bringing about the merger of clouds through a process called "dynamic seeding." This hypothesis was tested in a major field experiment conducted by NOAA, other Federal agencies, and universities, which was completed in 1976, showing localized precipitation increases of up to 50 percent and also wide-area increases due to dynamic seeding. A three-dimensional model, simulating the response of cumulus clouds to dynamic seeding, has been developed, and preliminary tests have been run in conjunction with the field program to provide improved understanding of these positive statistical results.

A second convective cloud research program, the Cumulus Dynamics and Microphysics Program (CDMP), initiated in fiscal year 1981, focusses on convective cloud development, interaction, and organization. From this research NOAA should (1) establish a physical basis for dynamic seeding, (2) increase understanding of the mechanisms of convective cloud organization and growth and of precipitation processes, and (3) provide a valid scientific basis for design of the experiments to evaluate weather modification technologies. Comprehensive field observing programs, data analyses, and numerical modelling studies will be used to understand the physical linkages involved in the dynamic seeding of convective clouds. The first field program is scheduled to occur over a four to six week period during the summer of 1983 in Florida, utilizing facilities there and building on the results of 1978 confirmatory statistical experiments in south Florida. During fiscal year 1982, a detailed design of this field experiment will be carried out using modeling simulations and field testing of new remote sensing techniques for probing clouds and precipitation and also using experimental design studies from data previously acquired from the Florida Area Cumulus Experiment.

NOAA began a new weather modification basic research program in fiscal year 1982, the Ice Crystal Processes Program, to obtain an understanding of the inititation, characteristics, behavior, and distribution of ice particles which form precipitation nuclei in mid-latitude regions. Current lack of understanding of this process is considered to be the most critical single impediment to progress in weather modification. Initial field studies will be directed toward determination of concentrations and the role of ice crystals in upslope wintertime clouds that produce snow at relatively warm cloud temperatures. Cloud chamber experiments are expected to provide ice formation and multiplication at warm temperatures, and models will be developed to predict precipitation yields from these clouds.

The Modification of Convective Clouds subactivity is zero-funded in the fiscal year 1983 budget request, thus terminating basic research, field experiments, and analyses of past experiments which have been geared to the development of modification technology for convective clouds.

Research flight services.—The NOAA Research Facilities Center (RFC), with research aircraft based in Miami, Florida, provides (1) basic and special measurements from airborne platforms in support of NOAA's research and development programs; (2) emergency weather reconnaissance for the National Weather Service; and (3) support to other program areas, other Federal agencies, and international programs approved by the Administrator. The RFC operates two fully instrumented aircraft (two WP-3D research aircraft) which have the capability to fly into hazardous weather conditions, thus providing platforms for research on atmospheric phenomena such as severe storms, squall lines, special cyclonic features, and flash flood events. NOAA is proposing a decrease of $1,131,000 in Research Flight Services. This decrease will eliminate WP-3D flight support associated with the above reductions, e.g., the Stormfury hurricane modification program, the Cumulus Dynamics and microphysics Program and the Ice Crystal Processes Program. This reduction represents approximately one-fifth of the base funding for Research Flight Services. The Research Facilities Center in Miami will continue to provide WP-3D research aircraft support to the following program areas: ocean-climate programs, including Equatorial Pacific Ocean Climate Studies (EPOCS); marine observations and predictions, including investigations of Great Lakes winds and waves and the Bering Sea marginal ice zone; hurricane research directed toward improving forecasts of hurricane tracks and intensities; and hurricane reconnaissance in support of the National Weather Service.

c. *Global atmospheric research program/world climate research program*

—The Global Atmospheric Research Program (GARP) and the World Climate Research Program (WCRP) are under the cognizance of the United Nations' World Meteorological Organization (WMO) and the International Council of Scientific Unions (ICSU). The Department of Commerce was officially designated by the President following passage of Senate Concurrent Resolution 67 in the 90th Congress, to be the lead agency in coordinating the United States' participation in the World Weather Program (WWP), which includes GARP and the WCRP as major elements. These activities are funded in the fiscal year 1983 budget request for a total of $3,172,000, which amounts to $2,221,000 below the fiscal year 1983 base of $5,393,000.

FGGE (the First GARP Global Experiment) is an attempt to assess the ultimate limit of deterministic weather forecasting. It provides an opportunity to test on a world-wide basis how well existing dynamic models of the Earth's atmosphere can simulate large-scale atmospheric motions and conditions. The Global Weather Experiment's five basic objectives are: (1) to obtain a better understanding of atmospheric motions in order to develop more realistic models for extended range weather forecasting, general circulation and climate; (2) to assess the ultimate limit of predictability of weather systems of various sizes and time scales; (3) to design an optimum, composite global observing system for routine numerical prediction of large-scale features and weather occurrences in the general circulation; (4) to develop new methods for assimilation of meteorological data in numerical weather forecast models, specifically more effective use of satellite data in models; and (5) to investigate physical mechanisms that cause climatic fluctuations in the time range of a few weeks to a few years and to develop and test appropriate models of climatic variability. Toward these ends, the international field observation phase of the Global Weather Experiment was conducted over a 12-month period ending November, 1979.

The major portion of the U.S. participation in FGGE is jointly sponsored by NOAA, the National Science Foundation, the National Aeronautics and Space Administration, and the Department of Defense. The U.S. activities in FGGE include scientific planning, computer modeling and processing, data analysis, and archiving. During Fiscal Year 1983, funds amounting to $2,632,000 will be used to continue FGGE data management and archiving activities but reduce the level of effort in data processing, validation, and analytical research based on the FGGE data sets.

The WMO recently initiated a World Climate Research Program (WCRP) to: (1) aid in achieving a better understanding of the physical basic of climatic change and variability; (2) determine the limits to which climate is ultimately predictable; (3) formulate and validate models of the climate system; and (4) determine the sensitivity of models to possible changes in atmospheric composition, in Earth's surface conditions, and in radiative forcing external to the climate system. In this sense, the WCRP builds directly upon FGGE.

Collection and processing of data from selected special observing systems deployed during FGGE will continue in Fiscal Year 1983. Data sets for climate research that include after-the-fact compilations of specialized precipitation, ice and snow, solar and earth radiation, and oceanographic data are scheduled to be completed and will supplement other FGGE data. This program also furthers technological transfer of the special observing systems developed and used during the observation phase of FGGE in order to aid the climate research studies, weather observations, and weather forecasting activities of WMO member nations. Funds amounting to $540,000 are requested to continue NOAA's Fiscal Year 1982 activities in support of the World Climate Research Program. The decrease will reduce NOAA support of measurements and research on polar ice and snow fields, eliminate the Arctic Basin drifting buoy program (polar climatology), reduce NOAA support of other climate-related oceanic research, and defer NOAA support for the International Satallite Cloud Climatology Project.

2. Committee Actions

The budget request for Atmospheric Research is $11,564,000, or $8,200,000 below the fiscal year 1983 base amount. The Committee recommends that $17,764,000, or $6,200,000 above the Administration request, be authorized for this category and that the $6,200,000 be allocated as follows: a $3,979,000 increase for weather modification activities; a $1,000,000 increase in the Global Atmospheric Research Program; and a $1,221,000 increase in the World Climate Program.

The Committee rejected the Administration request to terminate NOAA's involvement in weather modification research. In recent years, NOAA has emphasized basic research projects in weather modification, rather than testing and evaluation of seeding methodologies or interaction with users. The Committee feels that this emphasis is appropriate in light of both NOAA's expertise in atmospheric science and the need for fundamental understanding in the field. If it is ever to fulfill its early promise, the field of weather modification will need a dramatic success, one built upon a sound physical understanding of the events following cloud-seeding. The likelihood of such understanding has been enhanced by several recent experiments and by the routine experimental use of such technology as short wavelengh radar, radiometers, and lidar. The Committee feels that NOAA's current program in weather modification is on an appropriate course and should be continued.

SECTION 201(a)(4) NATIONAL CLIMATE PROGRAM OFFICE

1. Program Description

P.L. 95-367 established a National Climate Program consisting of three major elements: (1) coordination of ongoing Federal activities related to climate, with specific attention to program planning, management, and budget; (2) identification and funding of essential climate research programs; and (3) effective dissemination to and application by the user community of existing and forthcoming climate-related information.

To accomplish these objectives, the Secretary of Commece established in NOAA a National Climate Program Office (NCPO) responsible for implementing the provisions of the Climate Act. Included among these responsibilities was preparation of long-term (five-year) plans outlining goals and priorities of the program. The plan includes an identification of the roles of various Federal agencies in the program to achieve the goals enumerated in the plan, and a summary of program accomplishments as an aid in assuring that such goals were met. In essence, the office envisioned in the Climate Act was to serve as the focal point for Federal climate-related activities in order to effect a coherent, comprehensive, national program of climate research, applications, and services.

The first Five-year Plan, transmitted to the Congress on November 13, 1980, identifies three major categories of activities: (1) providing climatic products; (2) responding to impacts and policy implications of climate; and (3) understanding climate. The plan also describes six high-priority "Principal Thrusts" and thirteen lower-priority "Areas of Program Concern." Options for future program development are suggested that are not in present agency plans.

Under NOAA's leadership, the principal thrust "Generation and Dissemination of Climate Information" focused attention on better identification and interaction with users of climate data. The Environmental Data and Information Service (EDIS) and NCPO formed a Climate Information Users Group with broad representation from trade professions and business sectors. The NCPO is also supporting several prototype regional projects to test techniques and demonstrate uses of climate data.

The principal thrust "Climate Prediction" progressed with the establishment of an Experimental Climate Forecast Center at the Scripps Institution of Oceanography, La Jolla, California. The immediate objective of the Center is to provide and verify experimental forecasts of temperature and precipitation for each season of the conterminous United States. Experiments are also being conducted on seasonal forecasting one and two seasons in advance, and efforts are proceeding in the interest of determining exactly what kind of climate forecasts and related information will indeed prove to be most useful to differenct sectors of the national economy.

Leadership for the principal thrust "Climate Effects of Increasing CO_2 in the Atmosphere" is provided by the Department of Energy, and major research activities during the year have concentrated on measuring the increase in atmospheric CO_2 and evaluating its direct effects on climate and vegetation.

The principal thrust "Climate and World Food Production" led by the Department of Agriculture includes research activities devoted to better understanding crop/climate relationships and development of crop yield models suitable for regional and national crop production assessment.

"Solar and Earth Radiation" and "Transfer and Storage of Oceanic Heat" are two principal thrusts whose efforts this year are guided by NASA and NSF/NOAA, respectively. Study of both is necessary for modelling and forecasting climate and may in the long run lead to new methods of long range climate prediction.

The National Climate Program Office itself has initiated or contributed to a number of workshops and conferences to improve program planning and implementation and to aid integration of efforts within the climate research and service community.

For fiscal year 1983, the Administration and requests an authorization at the Fiscal Year 1982 base operating level of $1,100,000 for operations of the National Climate Program Office.

2. Committee Actions

The budget request for the National Climate Program Office is $1,100,000, which is identical with the fiscal year 1983 base amount. The Administration requests this funding under the "Basic Weather Analysis and Predictions" subactivity. The Committee recommends that $1,800,000, or $700,000 above the Administration request, be authorized for this category.

Additional Committee views on the National Climate Program and the National Climate Program Office are provided elsewhere in this report in the discussion of Title III of H.R. 6324.

SECTION 201(a)(5) ENVIRONMENTAL SATELLITE SERVICES

1. Program Description

NOAA's National Earth Satellite Service (NESS) operates a national environmental satellite system using two types of spacecraft. Those in polar orbit provide day and night observations of the Earth and its atmosphere and obtain quantitative data needed for numerical analysis and weather prediction. Spacecraft in geosynchronous orbit provide near-continuous observations of North and South America and the surrounding oceans and are useful in the early detection and monitoring of potential natural disasters and severe local storms. Requested funding will support continuation of the GOES system ($55,859,000); a one polar-orbiting satellite system ($19,453,000), with some delays in spacecraft procurement; required ground equipment systems ($13,188,000); and the LANDSAT program ($1,400,000). User fees are being proposed to offset remaining costs of the LANDSAT program ($23,340,000); under such a proposal, NOAA would be reimbursed directly by Federal users ($9,785,000), while fees from non-Federal users deposited in the Treasury would make up the remainder ($12,740,000).

Total requested funding by NOAA for environmental satellite services in fiscal year 1983 is $136,543,000, a net increase of $10,799,000 over the fiscal year 1983 base level.

Weather satellite services.—The purpose of this subactivity is to develop and maintain polar-orbiting and geostationary satellites to obtain global environmental data and near-continuous environmental observations of the Western Hemisphere; to develop methods for monitoring the oceanic, atmospheric, and space environments; and to develop interpretation techniques, applications of environmental satellite data, and user products. NOAA's polar-orbiting and geostationary satellites are complementary, providing unique environmental observations of the Earth's surface and near space.

Since 1960, data from environmental satellites have contributed to national environmental monitoring, prediction, and warning services. Polar-orbiting satellites obtain quantitative global data used to derive information on atmospheric temperatures and moisture, sea surface temperature, and snow and ice coverage. They also relay environmental information from fixed and moving remote platforms. The data are used in numerical weather analysis and prediction and in oceanographic, hydrologic, agricultural, and solar radiation programs. Geostationary satellites provide repetitive, continuous images that are needed to detect, track and monitor the growth and decay of severe weather systems in temperate and tropical latitudes. They continuously collect data from fixed platforms and retransmit satellite-derived products to national and international users via Weather Facsimile (WEFAX). The polar-orbiting and geostationary satellites both carry instruments to monitor the state of solar activity.

The current polar-orbiting operational environmental satellites are NOAA-6, launched June 27, 1979, and NOAA-7, launched August 24, 1981. When NOAA-6 completes its expected lifetime, NOAA-7 will be the only operational spacecraft in orbit according to current NOAA plans, which propose, starting in fiscal year 1983, to operate only one polar-orbiting satellite, with launches every 18 months regardless of the status of the in-orbit satellite. Among the instruments carried by the polar-orbiting satellites, NOAA-6 and 7, the TIROS Operational Vertical Sounder (TOVS) provides atmospheric temperature and water vapor profiles. Unprocessed TOVS data are broadcast continuously from the satellite for local use, and processed soundings are routinely transmitted over the Global Telecommunications System and archived by NOAA's Environmental Data and Information Service. The Advanced Very High Resolution Radiometer (AVHRR) provides medium resolution (4 km) quantitative measurements from which cloud images are broadcast on a continuing basis, allowing appropriate ground stations, worldwide, to receive directly images of other local areas through the Automatic Picture Transmission (APT) system. The AVHRR also provides high resolution (1 km) data with direct readout to local users through the High Resolution Picture Transmission (HRPT) system. NOAA HRPT stations are located at its Command and Data Acquisition (CDA) stations at Wallops Island, Virginia, and Gilmore Creek, Alaska, and at the San Francisco Satellite Field Service Station.

The AVHRR data are used in developing and improving a number of products, including sea surface temperature gradient charts; information used in differentiating between clouds, snow and ice, and liquid water; and selected images which are transmitted over the geostationary satellite WEFAX service and the NWS facsimile networks. Other services are provided by the Data Collection and Platform Location System, called ARGOS, and the Space Environmental Monitor (SEM), which provide measurements of solar activity. The SEM data are used in conjunction with similar data from geostationary spacecraft to monitor and predict effects of solar activity on terrestrial communications, electrical power distribution, and the operation of spacecraft and high altitude aircraft.

The ground system for the NOAA polar-orbiting satellites is divided functionally into two major subsystems: (1) the Data Acquisition and Control Subsystem (DACS), which controls and monitors the condition of the spacecraft, takes corrective actions when necessary, and receives data from the satellite instruments; and (2) the Data Processing and Services Subsystem (DPSS), which generates products and analyses needed to serve operational satellite data users.

The current Geostational Operational Environmental Satellites (GOES), funded by NOAA and providing near continuous day and night observations over the United States and adjacent oceans, are GOES-4 and GOES-5, launched in September 1980 and in May 1981, respectively. One geostationary satellite serves as the eastern operational satellite, located over 75° west longitude, while the other serves as the western operational satellite at 135° west longitude. Other geostationary satellites, launched previous to GOES-4 and GOES-5 are on standby, providing limited operational support. One of these, GOES Central, is positioned at 107° west longitude to transmit satellite and standard meteorological products through WEFAX.

The GOES system provides repetitive viewing of the development and movement of destructive weather systems over much of the Western Hemisphere. The Visivle Infrared Spin-Scan Radiometer (VISSR) Atmospheric Sounder (VAS) is the principal GOES sensor, carried on all geostationary satellites beginning with GOES-4. While retaining previous imaging capability (8-km resolution infrared and 1-km resolution visible images of the full Earth-disc every half hour and, on command, scans of portions of the Earth at three to 15 minute intervals to study the development of severe storms), the VAS can also measure atmospheric temperature and moisture.

GOES spacecraft also carry the Data Collection System (DCS) and a Space Environment Monitor (SEM) and broadcast environmental data to remote locations using the Weather Facsimile (WEFAX) system. The DCS is used to collect and relay data sensed by a variety of remotely located platforms.

Operation and maintenance of ground facilities required to command and control NOAA's environmental satellites, acquire data from the satellites, and transmit data to the central processing and analysis center, are carried out by the Satellite Operations Control Center (SOCC) at Suitland, Maryland, and by the Command and Data Acquisition (CDA) stations located at Gilmore Creek, Alaska, and Wallops Island, Virginia.

Analyses and interpretations of geostationary and polar-orbiting satellite data are prepared at Satellite Field Service Stations (SFSSs), whose primary function is support to the National Weather Service on a regional basis. These stations receive high resolution images on a 24 hour-per-day, seven day-per-week basis, and a picture of the full earth disc is available to each SFSS every 30 minutes. Since each field station has regional responsibilities, the earth disc is sectioned into a number of smaller geographical sectors, each tailored to regional needs, which are used in preparing aviation forecasts, short-term forecasts and warnings of hazardous events, and hurricane advisories and gale warnings. The products are also used in preparing river and flood forecasts, snow melt and sea ice analyses, and marine forecasts and warnings for shipping, fisheries, and recreational boating. Geostationary satellite imagery from the SFSSs is available to television stations, universities, State governments, industry, and other Federal agencies on a reimbursable basis. This service allows the user to receive any one of the standard image sectors available to a particular SSFS. At present this service has been extended to the Weather Service Forecast Offices and to about 600 other Federal and non-Federal organizations.

Research is directed toward development of new and improved methods of obtaining satellite data and to the application of these data more effectively in environmental monitoring, prediction, and warning. Universities and industrial groups participate in these developmental activities through contracts and grants, and NOAA also maintains coordination with related research and development programs in NASA and the Department of Defense. In particular, techniques are developed to provide improved information on (1) the vertical distribution of temperature and moisture from infrared and microwave measurements, (2) wind vectors at different altitudes determined from cloud motions, (3) the earth-atmosphere radiation energy balance for climate activities, (4) the distribution of aerosols, ozone, and other trace gases in the upper atmosphere, (5) the estimation of precipitation and solar insolation at ground level, based on satellite observations, and (6) the distribution of sea surface temperatures. Activities also include development of techniques to determine refined distributions of snow and ice for flood forecasting and other hydrological studies.

The development of new and improved techniques to derive accurate information on the vertical distribution of temperature, moisture, and other constituents using high resolution measurements is a major effort. To support this work, laboratory spectroscopy studies of the transmission characteristics of atmospheric gases will be continued and results will be compared with satellite data to aid in the analysis and interpretation of satellite data in stratospheric monitoring. Since some operational satellite sensors do not have onboard calibration, measurements obtained from aircraft flights over selected areas during satellite overpasses will be used to calibrate these sensors.

NOAA requests $25,641,000 in fiscal year 1983 for its polar-orbiting spacecraft systems, a decrease of $24,665,000 from the fiscal year 1983 base. The requested funding is for continued procurement of NOAA series polar-orbiting spacecraft and sensors ($5,253,000); refurbishment of Atlas launch vehicles and required launching services ($14,200,000); and modification and upgrading required for the ground processing system ($6,188,000). This request would fund a one polar-orbiting satellite system with replacement launches scheduled on 18-month centers. Associated with the decrease is a reduction of five positions. The decision to change the procurement cycle would, according to NOAA, reduce long term Federal expenditures by $271,453,000 over the life of the revised polar-orbiting spacecraft launch plan. Under this revised one polar-orbiting spacecraft launch plan, the spacecraft and associated launching procurements through NOAA–J would provide for an operational system through fiscal year 1992. Because of the stretch-out of the NOAA–A through J program lifetime, procurement of follow-on spacecraft would be deferred three years from fiscal year 1984 to 1987. A one satellite system would reduce somewhat the amount of data received because the lower operating altitude does not provide full global coverage.

Contemplated work in fiscal year 1983 includes completing of testing and launch of NOAA-D; fabrication, integration, and testing of NOAA-E, F, and G; continuation of sensor procurements for follow-on satellites NOAA-H, I, and J); and initiation of a detailed design study to modify NOAA-H, I, and J spacecraft to be launched on the space shuttle.

NOAA also requests $62,859,000 in fiscal year 1983, an increase of $35,464,000 from the fiscal year 1983 base level, to fund the continuing construction of GOES-F through I spacecraft and sensor procurement, to continue remibursement to NASA for launching the GOES spacecraft, and to provide ground equipment compatible with changes implemented in the NASA communications network.

Procurement of GOES-D, E, and F spacecraft was begun with funds appropriated in fiscal year 1976; and GOES-G, H, and I procurements, which were begun in fiscal year 1981, will be completed in fiscal year 1986. NOAA feels that continued funding of the GOES-F through I spacecraft procurements and launching costs at the level requested is necessary to maintain timely deliveries and to ensure continuity of the established two GOES system. The amount required in fiscal year 1983 for the GOES spacecraft and launching is unchanged from the projection in the fiscal year 1982 budget; however, there is an increase in ground system costs of $2,800,000, necessitated by changes in the NASA communications network, and of $4,200,000 to refurbish other elements of the GOES ground system required by age and obsolescence of existing equipment.

Land satellite services activity.—Early in calendar year 1983 NOAA will assume responsibility for operation of LANDSAT system, developed by NASA. Since authorization of LANDSAT for fiscal year 1983 is included in H.R. 5890, this program is not covered in this report.

2. Committee Actions

The budget request for Environmental Satellite Services, exclusive of land remote sensing systems, is $136,543,000, which is $24,665,000 below the fiscal year 1983 base amount. The Committee recommends that $156,208,000, or $19,665,000 above the Administration request, be authorized for this category and that the $19,665,000 be allocated as follows: a $24,665,000 increase to maintain a two-satellite, polar-orbiting system; and a $5,000,000 across-the-board decrease in Environmental Satellite Services.

The Committee feels strongly that the two polar-orbiting satellite system should be retained. Oversight hearings by the Subcommittee on Natural Resources, Agriculture Research, and Environment indicated that there are two serious risks associated with the Administration's proposal to downgrade the system to a one-satellite system.

First, the level of forecasts and services would decline. Long-range forecasts will suffer, as will short-range forecast in tropical areas, in the southern hemisphere, and in oceanic areas such as Hawaii and Alaska. Other cooperative programs will suffer, including AGRISTARS (which provides crop production forecasts), the World Climate Program, and a proposed search-and-rescue mission. And perhaps most significantly, the Committee felt that the proposed reduction in satellites would adversely affect our relations with nations of the third world. Currently over 120 nations receive weather satellite data from the United States. According to NOAA, downgrading the two-polar system would not allow these nations to do a respectable job under third-world weather conditions. Further, many of these nations use satellite information to monitor crop production and to aid in planning for agriculture, fishing, and water management.

The second risk associated with going to a one-polar system is its lack of back-up capacity. Thus, in the event of a launch failure or an operational failure, there will be no satellites in orbit for a period of one to eighteen months. With no polar orbiting satellites, the art of weather forecasting would be plunged back to the 1940s, and the resultant deterioration in forecasting would lead to losses in many sectors of our economy—from agriculture, to water management, fisheries, construction, forestry, and energy distribution.

In balance, the two-satellite system provides better forecasts, insurance against satellite failure, and a cheap source of foreign aid; it is a cost-effective investment.

As part of the effort to reduce NOAA funding from the Subcommittee mark, the Committee also recommends a $5 million across-the-board decrease in Environmental Satellite Services. Even with this reduction, the Committee has provided an increase of nearly $33 million above the fiscal year 1982 appropriations level for Environmental Satellite Services. If the resources provided are not adequate to support a weather satellite program as presently operated, the Committeee expects that NOAA will either reprogram funds to maintain the program or will stretch out satellite launch dates slightly to make up the $5 million reduction.

SECTION 201(a)(6) ENVIRONMENTAL DATA AND INFORMATION SERVICES

1. Program Description

Through its Environmental Data and Information Service (EDIS), NOAA provides worldwide environmental data and information products and services in the atmospheric, marine, solid earth, and solar-terrestrial sciences. Users include Federal, State, and local government agencies; industry, agriculture, academia, and the general public. These products and services are used in decisions critical to the national economy, national defense, productivity of American industry, energy development and distribution, world food supplies, public health and safety, and development of natural resources. Data are obtained from all available sources, national and international, and are processed for rapid access by users.

In fiscal year 1983, NOAA proposes total decreases of $1,782,000 from the fiscal year 1983 base level, with a request of $24,328,000 for environmental data and information services. Specific decreases result from elimination of the Environmental Science Information Center (−$1,046,000) and reduced funding for climate data (−$478,000). In addition, user fees are proposed to partially offset program costs ($258,000).

Climatic data services.—the National Climatic Center (NCC) at Asheville, North Carolina, receives and processes over 30 million meteorological observations annually and provides data and summaries to a large and diverse user community. In addition, the Satellite Data Services Division of NCC (located at Camp Springs, Md.) retains satellite digital data, over five million atmospheric soundings, and more than 30,000 images from six satellites each year. Data are acquired from the National Weather Service, the National Earth Satellite Service, military services, and international sources to provide a National Climatic Data Base in digital, analog, microfilm, photo imagery, and manuscript forms. There are over 95,000 subscriptions to regularly published NCC data summaries, and in 1981 over 80,000 individual user requests were answered. General publications serve broad user needs, while other data publications are designed to meet special needs of user groups.

In climatic data services NOAA proposes a decrease of $553,000 as a portion of its effort to reduce Federal expenditures. Of this reduction, a decrease of $478,000 and 1 position would terminate the fiscal year 1982 climate data base initiative. Included in this proposal is a decrease of $75,000 to be recovered by an increase in user charges, the reduction to be offset by an increase in Trust Fund receipts.

Ocean data services.—The National Oceanographic Data Center (NODC) in Washington, D.C., the world's largest repository of oceanographic data, provides data, on an exchange or reimbursible cost basis, to government agencies at all levels, academic and private research institutions, industry, foreign governments, and the general public. Data held at NODC includes bathythermograph records, sea surface to near-bottom records of temperature, salinity, and nutrient chemistry, and surface and sub-surface current measurements. Data are also collected from automated ocean data buoys and from special projects and surveys. NODC products include manuals for reporting ocean data, atlases, and *Computer Programs in Marine Science*. Special data summaries are prepared on request. NODC cooperates with the processes data deposited in World Data Center A (Oceanography), which is colocated with the Center. NODC also participates as data manager in major marine programs established by the National Ocean Pollution Planning Act (P.L. 95-273).

NOAA is proposing a decrease of $61,000 in ocean data services in fiscal year 1983, to be recovered by an increase in user charges. This reduction would be offset by an increase in trust fund receipts.

Geophysical and solar-terrestrial data services.—The National Geophysical and Solar-Terrestrial Data Center (NGSDC) in Boulder, Colorado, provides data and services on the physical properties of the Earth, its snow and ice environment, and a core program for solar-terrestrial physics. Disciplines covered include seismology, geomagnetism, gravity, marine geology and geophysics, glaciology, paleoclimatology, the ionosphere, and solar-terrestrial physics. Users in 1981 included over 9,900 scientists, engineers, surveyors, lawyers, and members of the public. Organizations served include 50 departmental and independent Federal agencies, about 100 universities and non-profit research establishments, industries, and several hundred foreign organizations, many of which provide data for World Data Center A for Physics, Solid Earth Geophysics, and

Glaciology, operated by NOAA. Selected data are exchanged with World Data Center B in Moscow and World Data Centers C in Europe and Japan, under the auspices of the International Council of Scientific Unions. The Center prepares a number of standard summaries and listings, such as consolidated lists of solar flare observations, compiled from worldwide observatories, and the annual history of earthquake occurrences in the United States. Special summaries and reports, such as maps of active volcanoes and tables of magnetic data, are prepared to meet specific user needs.

NOAA requests a decrease of $61,000 in geophysical and solar-terrestrial data services in fiscal year 1983, to be recovered by an increase in user charge fees. This reduction will be offset by an increase in trust fund receipts.

Environmental data analysis and assessment services.—The Center for Environmental Assessment Services (CEAS) in Washington, D.C., provides data, analyses, and interpretations to meet national and international needs for climatic and marine environmental assessment. CEAS uses current and historical environmental data to aid managers of national resources by assessing impacts of climate variations on food, transportation, and energy resources and by assessing impacts of offshore energy developments on marine resources. Impact assessment is accomplished by development and application of statistical and other models, preparation of model imputs from data bases, and tracking and verifying climatic anomalies on a global basis.

NOAA is proposing a decrease of $61,000 in these services in fiscal year 1983, to be recovered by an increase in user charges. This reduction would be offset by an increase in trust fund receipts.

Environmental documentation and information services.—The Environmental Science and Information Center (ESIC) in Rockville, Maryland provides environmental literature, information, and referral services to national and international user communities; publishes the results of NOAA's research and technical service programs; and acquires, indexes, archives, and disseminates information on technical and scientific publication, reports, and abstracts from domestic and international sources on oceanic, atmospheric, earth, and space sciences. About 20,000 copies of books, journals, technical reports, and microfilms are catalogued annually be ESIC and added to NOAA's libraries, which have total holdings of about 500,000 volumes.

NOAA is requesting a decrease of 20 positions and $1,046,000 to reduce activities of the Environmental Science Information Center (ESIC). Reduction and termination of less critical ESIC programs will permit the proposed savings, but enable continuation of the core library and information activities.

2. Committee Actions

The budget request for Environmental Data and Information Services is $24,328,000, which is $1,524,000 below the fiscal year 1983 base amount. The Committee recommends that $25,328,000 or $1,000,000 above the Administration request, be authorized for this category and that the $1,000,000 be allocated as follows: a $500,000 increase to upgrade the data base at the National Climatic Center in Asheville, North Carolina; and a $500,000 increase for the Environmental Science Information Center.

The increase for NCC would fund the first year of a multi-year effort to restructure, inventory, edit, and validate the total climatic data base. It is expected that this project will augment station records which are currently imcomplete, in addition to making the data base considerably more accessible. The effort to upgrade the quality and accessibility of climatic data is a high-priority project identified in the National Climate Program's first 5-year plan and is in direct conformity with past recommendations of the Committee to enhance the usage of data which is already available.

The Committee is concerned about the suitability of the NCC facility as a data repository. The building is poorly designed for housing of computer facilities, and the data are not provided with an adequate fire-protection system. The University of North Carolina at Asheville has offered the government a suitable parcel of land on which a new Center could be built, a center which would enhance cooperative efforts in climatic research and data management between the Federal government and the university community. The Committee strongly urges NOAA and GSA to give fullest consideration to the UNC/Ashville proposal and to recognize that intellectual benefits accrued from cooperative research should be a part of the cost-benefit analysis of this plan.

SECTION 201(b)

Section 201(b) provides for the transfer of funds between categories in accordance with specific guidelines laid out within the section. The Committee agreed that it would be appropriate to allow NOAA some flexibility in reprogramming authorized funds from one category to another. The Committee has therefore authorized the transfer of amounts up to ten percent of the funding authorized for a given category into or out of that category at the discretion of the Administrator. While recognizing the need for a certain amount of flexibility in making small changes without seeking approval by the Congress, the Committee believes that oversight by the Committees would be greatly enhanced if the agency were required to notify the Congress and obtain approval before shifting larger sums between categories. Thus, this section provides that, if more than ten percent of the funds authorized for a particular category are to be transferred into or out of that category, approval must be sought from the appropriate Committees of the House and Senate.

SECTION 202

Section 202(a) provides that the Administrator of NOAA keep the Committee fully informed about NOAA's atmospheric, climatic, and ocean pollution activities.

Section 202(b) specifically addresses the Committee's need for timely budget information so that the Committee can make informed decisions before the deadlines set by the Budget Act. The Committee must have a complete description of NOAA's atmospheric, climatic, and ocean pollution activities and the financial resources required to carry out these activities. The Committee does not intend to request duplicate reports from NOAA, and recognizes that other reports being prepared by NOAA may satisfy some of the Committee's needs if made available in a timely fashion.

SECTION 203

Section 203 requests the Administrator to prepare a report on the importance of meteorological satellites to weather forecasting, to be submitted to the Congress at the same time as the fiscal year 1984 budget request.

The costs for meteorological satellites has been escalating at a very rapid rate in recent years. In fiscal year 1983, approximately $162 million would be required to operate the same program which cost $93 million in fiscal year 1981. Thus, it was not surprising that a cost-conscious Administration would propose elimination of one of the two polar-orbiting weather satellites in fiscal year 1983 as a means of saving significant revenues throughout the 1980s.

The Committee feels, however, that the proposal to eliminate a polar-orbiting satellite was very poorly justified. The proposal was not supported by studies on the impact of a second satellite on the accuracy of weather forecasts, despite the fact that such studies have been attempted in recent years by NASA. Neither did the proposal include an assessment of the probability of launch failure, or of the international implications of eliminating one polar-orbiter.

The Committee believes that the Congress will disagree with the Administration's proposal to eliminate one of the polar-orbiting satellites in fiscal year 1983, and that the Administration will again propose this savings in fiscal year 1984. Therefore, the Committee directs NOAA to prepare a quantitative study assessing the importance of satellites to weather forecasting. The study should include an analysis of the quality of forecasts generated in representative areas of the globe when data from zero, one, and two polar-orbiting satellites are used. These comparisons might be drawn from historical forecasts when one versus two satellites were in orbit, or might be generated by omitting the data from one satellite at a time when two are operating. The Committee suggests that NOAA utilize the expertise of the National Academy of Sciences as may be necessary in designing and reviewing this study.

The study shall also include the other elements listed in Section 203 of the bill.

The Committee feels that the decision to transfer either land remote sensing satellites or meteorological satellites to the private sector will be one of the most important policy decisions affecting NOAA in the next few years, and the Committee intends to play an active role in these potential decisions. Therefore, Section 203(a)(6) directs the Administrator to continue to keep the Committee informed of the Administration's analysis of the possible transfer of weather satellites to the private sector. Section 203(b) directs that no monies shall be used to transfer any weather satellites to the private sector without the express approval of the Committee on Science and Technology and the Committee on Commerce, Science, and Transportation. A similar provision relating to land remote sensing satellites is included in H.R. 5890.

SECTION 204

Several trends in the operation of the National Weather Service have emerged in recent years:

(1) introduction of high technology and automation in data-collection and in transmission of data and forecasts;

(2) decreasing personnel levels;

(3) consolidation of Weather Service Offices (WSOs)

(4) increased emphasis on short-term, mesoscale weather forecasting.

The Committee feels that these trends will continue and will make careful, long-term planning by the National Weather Service essential if it expects to improve weather services in the coming decade. Although the Weather Service clearly recognizes the importance of these trends, the Committee believes that the Service has not clearly articulated a long-term plan for organization which incorporates necessary technological advances.

Accordingly, the Committee directs the Weather Service to prepare a preliminary report on its future organization and technological capabilities and needs. The necessary elements of the report are specified in Section 204. The Committee expects that this report will enable it to assess more clearly future budget requests for advanced technological systems and for proposed closures of weather stations.

TITLE III—NATIONAL CLIMATE PROGRAM

(Additional information on the National Climate Program Office is contained in the description for Section 201(a)(4) of the bill.)

Title III of H.R. 6324—the "National Climate Program Amendments of 1982", was developed as a result of oversight hearings held by the Committee during the 97th Congress. During hearings held on the fiscal year 1982 reauthorization of the National Climate Program by the Subcommittee on Natural Resources, Agriculture Research, and Environment on March 6, 1982, several concerns were raised about the existing Climate Program. All of the non-agency witnesses agreed that neither the Intergovernmental Climate Program nor the Experimental Climate Forecast Centers had met the goals specified for them in the organic legislation. In addition, the National Climate Program Office was criticized for its failures to affect OMB's budget process significantly, to provide funding for "gap" activities, and to coordinate long-range planning for government climate activities—in short, to function as a true national climate office.

The Committee asked witnesses at the hearing to set up an *ad hoc* group to prepare recommendations for the Committee on ways to increase the effectiveness of the program. The group included the Chairman of the Climate Board of the National Academy of Sciences, the Chairman of National Climate Program Advisory Committee, the President of American Association of State Climatologists, and the acting director of the National Climate Program Office. At a series of meetings throughout the summer of 1981, the group met with representatives of participating government agencies, members of the Advisory Committee, members of the Climate Board, and others to discuss issues and develop suggestions for legislative changes. Most of these suggestions were incorporated into H.R. 5401, which was itself incorporated into H.R. 6324 as Title III.

The Committee feels that the most important provision of Title III is the statutory establishment of the Climate Program Policy Board. All agencies participating in the Program should be represented on the Board at a policy level sufficiently high to make presumptively binding budget commitments. The Board functions as a "board of directors" for the Program and is responsible for long-range planning and presentation of budgetary recommendations to OMB. Chairmanship of the Board rotates every two years in order to foster inter-agency participation.

The National Climate Program Office shall remain within NOAA, separate from the NOAA Climate Office, and shall function as staff to the Policy Board. The Program Office should be responsible for administering the National Climate Program, for staffing the Climate Program Policy Board, for providing budgetary analyses for the Policy Board, for coordinating interagency participation in international activities, and for administering the Intergovernmental and Experimental Forecast Center Program. The committee expects that NCPO will be recognized as the principal climate office in the federal government, and that its Director be both a recognized leader in the climate community and the primary spokesperson to outside groups and other governments about the elements of the National Climate Program.

The Committee believes that these provisons will enhance budgetary coordination. Agencies participating in the Program will submit proposed budgets to the National Climate Program Office simultaneous to their submission to OMB. The NCPO shall analyze the budgets for the Board, who shall then review the budgets and the analysis and seek a consensus about the consistency of the budgets with the goals of the National Climate Program. If such a consensus is not possible, minority reports can be submitted.

There are a number of important areas established in the National Climate Program which have been termed "principal thrusts" and "areas of program concern". These areas should be monitored and guided by interagency working groups headed by the agency with lead responsibility for the activity. Again the National Climate Program Office would provide staff support to such committees and working groups, and these groups would report periodically to the parent Board.

In addition to setting out the roles of the Policy Board and the Climate Program Office, Title III contains a number of other provisions. The goals of the Intergovernmental and Experimental Forecast Center Programs are retained. However, the matching funds provisions of the Intergovernmental Program are removed to provide flexibility in securing necessary activities. The Secretary of Commerce is authorized and encouraged to enter into cooperative agreements, to loan equipment, to purchase services, and to enter into research demonstration contracts or grants to assist in attaining the Program's objectives.

The National Office is provided with specific authority to fund climate activities in areas not being adequately addressed by and Federal agency. This "gap-funding" is an important and successful element of the National Ocean Pollution Planning Act and could be an equally effective coordinating mechanism for the National Climate Program.

The Committee examined the issue of whether the National Climate Program Advisory Committee should be retained, in light of the Statutory creation of the Climate Program Policy Board and in light of the Administration's view that the advisory function could be served by the Climate Board of the National Academy of Sciences. However, the Climate Board is largely composed of climate researchers, while the National Climate Program Advisory Committee, as indicated in the Conference Report (No. 95-1489) accompanying the organic legislation, is to be composed largely of users of climate data, information, and services such as farmers. The Committee continues to believe that the most important single goal of the National Climate Program would be to enhance the use and usefulness of data that is already available in national archives and that the Advisory Committee has a vital role to play in reaching this goal.

In an effort to consolidate these three groups (the Policy Board, the Advisory Committee, and the Climate Board), the Committee has directed the Policy Board, rather than the Secretary of Commerce, to maintain a committee of users of climatological data, information, and services, to advise the Board, the Director, and the Congress on the Program.

Title III also specifies that of the funds authorized for the National Climate Program Office pursuant to section 201(a)(4) of the Act, specified percentages shall be made available to both the Intergovernmental Program and the Experimental Climate Forecast Centers. This provision highlights the importance that the Committee attaches to these programs and ensures that additional funding will be available to these vital programs, should the appropriation for the National Climate Program Office be increased above the Administration request.

TITLE IV—GREAT LAKES PROTECTION

Background and Need for Legislation

1. Introduction

The Great Lakes are vital resources of significance to the United States, Canada, and the world. They constitute by far the largest body of freshwater on the earth, accounting for 95% of our nation's freshwater and 20% of the world's supply. Millions of people use these lakes each year for recreation and drinking water. Additionally, 20% of the United States population and 25% of American industry rely on its waters. The economy of the Midwestern United States depends on the manufacturing, fishing, shipping, and recreation-related companies and interests that have developed as a result of their proximity to the Great Lakes.

2. History of Great Lakes Protection

The United States and Canada have a common stake in the protection of the Great Lakes. Both governments recognized this fact over 70 years ago by signing the Boundary Waters Treaty of 1909 to settle any disputes that might arise over the use of the Great

Lakes. An independent organization known as the International Joint Commission (IJC) was formed to help implement the treaty's provisions. Since its formulation, the IJC has dealt with a wide range of Great Lakes issues. The last 20 years have been marked by an increase in pollution of the Great Lakes with a subsequent decrease in water quality. The Commission has responded by focusing its attention on these problems, most notably the phosphorus-caused eutrophication of the lower Great Lakes and the current toxic chemical contamination of parts of the Great Lakes ecosystem. Recognition of these problems and the need to abate them prompted the United States and Canada to enter into the Great Lakes Water Quality Agreement of 1972. A more comprehensive pact, the Great Lakes Water Quality Agreement of 1978, affirmed each nation's commitment to protect the Great Lakes, and to conduct more ambitious research and monitoring. The 1978 Agreement also set in place clear guidelines for improvements of the environmental quality of the Great Lakes. The Administration is on record as supporting the 1978 agreement, pledging during his trip to Ottawa in March, 1981 "... to protect our joint heritage in the Great Lakes."

3. Scope of Problem

The International Joint Commission reported in 1980 that a major drawback of U.S. Great Lakes Programs was a lack of coordination among Federal agencies with respect to implementing programs affecting the water quality of the Great Lakes. Compounding this problem was the elimination in 1981 of the Great Lakes Basin Commission, whose major responsibilities were to coordinate land and water resource planning among the eight Great Lakes States and 11 Federal agencies. The Committee was advised by a number of hearing witnesses that the environmental quality of the Great Lakes was not being adequately protected under existing Federal programs. Further emphasis by these witnesses was placed on the need of a regional approach to the management of Great Lakes pollution.

Although many Federal programs are currently being reduced, the Great Lakes programs are particularly hard hit. the Environmental Protection Agency (EPA) maintains two facilities that serve the Great Lakes. Both of these facilities, the Great Lakes National Program Office, located in Chicago, Illinois, and the Large Lakes Research Station, located in Grosse Ile, Michigan, perform research and surveillance studies; much of the work done by these facilities is directly supportive of the 1978 Great Lakes Water Quality Agreement. Funding cuts for the Chicago office and the proposed elimination of the Grosse Ile facility in FY 1983 have seriously hampered this country from carrying out its commitments under the 1978 Agreement. The Administration is also proposing to eliminate in FY 1983 the National Oceanic and Atmospheric Administration's Great Lakes Environmental Research Laboratory and its National Sea Grant College Program. These programs perform research and monitoring on Great Lakes problems such as toxic chemical contamination and eutrophication.

In sum, the various federal programs invloved in Great Lakes matters carry out their respective activities with little of no coordination. This situation, compounded by recent reductions and/or terminations in EPA and NOAA Great Lakes Research efforts, has resulted in waste, overlap, and misdirection of many Great Lakes programs. Additionally, these budget cuts may prevent the United States from meeting its commitments to the Canadian Government under the Great Lakes Water Quality Agreement of 1978.

COMMITTEE RECOMMENDATIONS

1. General Views

The Committee is deeply concerned with the preservation and protection of the Great Lakes. Presently, the Great Lakes programs lack overall coordination and have experienced massive funding cuts and terminations. This Committee believes that prompt action is necessary to improve coordination of Federally supported programs aimed at preserving and protecting the environmental quality of the Great Lakes and to provide sufficient funding authorization in order to assure that effective coordination of research and monitoring activities is conducted. The Committee believes that effective coordination can be achieved through adoption of the Great Lakes Protection Act, introduced by Congressman James J. Blanchard (D-Mich.) on May 7, 1981. This legislation reauthorizes the National Ocean Pollution Planning Act of 1978, which provides for the development of a five-year plan to identify national needs and priorities concerning ocean pollution abatement, including the Great Lakes, and to coordinate Federal research in these areas. In the Committee's view, the National Ocean Polution Planning Act is the appropriate vehicle for coordination of Great Lakes research and monitoring.

2. The Great Lakes Protection Act of 1982

SECTION 201.—FINDINGS, PURPOSE, AND DECLARATION OF POLICY.—This section recognizes the importance of the Great Lakes and directs Congress, for the first time, to declare that the protection of the environmental quality of the Great Lakes be the continuing policy of the Federal Government. The intent of section 201 is to maintain a high level of environmental quality in the Great Lakes through mutual cooperation of Federal, State, local, and Canadian Governments.

It is the understanding of the Committee that all actions of the Federal Government pertaining to the Great Lakes should be undertaken in a manner consistent with the fundings, purposes, and policy set forth in this section. Consistent with the Committee's intent, no agency of the Federal government should support any efforts to deplete or divert the waters of the Great Lakes without full consultation with all affected communities, businesses, and units of government. It is the intent of the Committee that enactment of the Great Lakes Protection Act—by recognizing the importance of the Great Lakes, and making their preservation a national policy—would deter any efforts to deplete or divert the waters of the Great Lakes.

SECTION 202.—GREAT LAKES RESEARCH OFFICE.—The Committee feels that the location of the Great Lakes Research Office be within one of the eight Great Lakes States. The intent of this requirement is to enable the Office and its Executive Director to be in close proximity to appropriate Federal, State, and local officials involved in Great Lakes issues. This will allow the Executive Director and staff to address Great Lakes issues and concerns from a regional perspective.

The key to the success of the Great Lakes Office in carrying out its duties depends on the appointment of a competent Executive Director. Appointment is to be made by the Administrator of NOAA in consultation with appropriate Federal, State, and local officials. The Administrator shall seek the recommendations of the following individuals concerning this appointment: Chairman of the United States Section of the International Joint Commission, Director of the U.S. EPA's Great Lakes National Program Office, Director of the U.S. EPA's Large Lakes Research Station, Director of NOAA's Great Lakes Environmental Research Laboratory, Director of National Sea Grant Programs from Wisconsin, Michigan, Minnesota, Ohio, and New York, and the Governors of Minnesota, Wisconsin, Illinois, Michigan, Indiana, Ohio, Pennsylvania, and New York.

SECTION 203.—GREAT LAKES ENVIRONMENTAL IMPACT ANALYSIS.—The Committee is concerned about the lack of serious application of the National Environmental Policy Act (NEPA) of 1969 to Federal actions significantly affecting the Great Lakes. The Committee was informed that existing NEPA procedures have not been sufficiently sensitive to Environmental problems of the Great Lakes. Section 203 directs the Executive Director to determine if a proposed Federal action significantly affects the Great Lakes. The Executive Director will determine such significance in accordance with the policy set forth in Section 201. When such significance is determined, the Executive Director shall require each Federal agency preparing an Environmental Impact Statement to include an appendix making special reference to the Great Lakes. The purpose of the appendix requirement is to allow for sufficient exposure of Great Lakes environmental issues in the preparation of Environmental Impact Statements.

The Executive Director is also required to comment these statments before they are included in recommendation or report pursuant to Section 102(2)(c) of the National Environmental Policy Act of 1969. The appendix and commenting authority granted the Executive Director is to be applied only to those Environmental Impact Statement required under NEPA.

3. Funding Authorization

The Committee recommends that $2,800,000 be authorized for each of the fiscal years 1983 and 1984 for the National Ocean Pollution Planning Act of 1978, a decrease of $200,000 from the Administration's request for fiscal year 1983. Of these funds, and amount not more than $750,000 shall be allocated to the Great Lakes Research Office.

TITLE V—OCEAN POLLUTION RESEARCH

BACKGROUND

The Marine Protection, Research, and Sanctuaries Act of 1972 became effective on April 23, 1973. Since that time all ocean dumping of waste materials has been regulated, either by EPA or, in the case of dredged spoils, by the U.S. Army Corps of Engineers. Congress recognized that wise use of the oceans depended upon a firm scientific understanding of the impacts of coastal pollution and charged NOAA, in Title II of the Ocean Dumping Act, with the responsiblility for determining the effects of past and current introduction human-generated wastes on marine ecosystems.

The 1970s was a decade which saw further restrictions on the dumping of wastes—particularly municipal and industrial wastes—into the ocean.

In the 1980s, the pendulum is beginning to swing back toward increasing use of the oceans for waste disposal. The National Advisory Committee on Oceans and Atmosphere (NACOA) recommended in 1981 that the oceans might be used for disposal of sewage sludge and certain types of industrial wastes. In April of 1981, a Federal district court in Manhattan struck down the 1981 deadline for disposal of sewage sludge at a site 12 miles offshore from New York City.

Many marine scientists argue that the oceans possess an inherent "assimilative capacity" for safely absorbing wastes. Few would argue that an assimilative capacity does not exist. The key, however, is determining where, when, and in what quantities wastes may be safely released into the oceans. Those who dispute the assimilative capacity model do not object to it in principle; rather they would argue that present data and models are inadequate to utilize the assimilative capacity model in managing the oceans.

At a time when the need for good ocean pollution data is clearly increasing, the Administration is proposing large FY 1983 cuts in the ocean pollution research budgets of both NOAA and EPA. NOAA, for example, would terminate $6.8 million in "Regional Projects and Ocean Dumping Research," which includes work in the New York Bight, in Puget Sound, in the Northeast Monitoring Program, and in the Ocean Dumping Program. Further cuts of $32.2 million in the Sea Grant Program would also include a significant number of ocean pollution projects. EPA cuts in water quality research, which includes marine research, are projected to be 40% in FY 1983. In addition, both EPA and NOAA are proposing to eliminate Great Lakes research laboratories in fiscal year 1983.

Wise management of the oceans in the 1980s and beyond will depend upon an understanding of the potential impacts of man's activities upon living and non-living marine resources. Such understanding will be critical in several specific areas:

> *Oil development.* The Administration is proposing an expanded program for offshore oil and gas leasing and development. Impacts on marine fisheries may occur in such sensitive areas as George's Bank. Increased oil development may impact the oceans by increasing the likelihood of spills or blowouts, by in-

creasing low-level persistent oil pollution, or by increasing exposure of aquatic organisms to potentially toxic drilling muds.

Coal Exports. Increasing the Nation's capacity for coal exports will require port development and a tremendous amount of harbor dredging. Particularly in polluted onshore areas near cities in the Eastern U.S., large dredging projects have the potential to introduce heavy metals and synthetic organic chemicals such as PCBs into the marine food chain. The possibility of resuspension of PCBs threatened to close down New York Harbor in 1980. Our understanding of the impact of large dredging projects on marine ecosystems is still rudimentary.

Sewage Sludge Disposal. In April, 1981, a Federal judge overturned the December 31, 1981 ban on sewage sludge disposal in the New York Bight. As a result of this ruling and EPS's new sludge policy, several Eastern jurisdictions, including Philadelphia, are reconsidering their sludge disposal options. These recent events raise the definite possibility that disposal of sewage sludge will increase dramatically during the 1980s.

Disposal of industrial and nuclear wastes. NACOA has recommended, and EPA is reconsidering, allowing disposal of certain types of industrial wastes in the oceans. At the present time, only two companies dispose of industrial wastes in the ocean. In the nuclear area, the Dept. of Energy has an ongoing program to investigate placement of high-level waste below the sediments in the deep Pacific Ocean. In addition, the Navy is investigating decommissioning of nuclear submarines by scuttling them in the deep ocean.

Cross-Media Assessments. EPA is revising its regulations to permit ocean dumping of any material not specifically prohibited by statute, when ocean disposal is the most environmentally acceptable and economically feasible means of disposal. Of course, judging which disposal option—incineration, landfill, or ocean dumping—is most "acceptable and feasible" depends upon an analysis of the environmental effects of disposal in the various media. Testimony at hearings held by the Subcommittee on Natural Resources, Agriculture Research, and Environment in May, 1981 indicated that the ability to perfrom such "cross-media assessments" is currently quite limited. Thus, the implementation of EPA policy would seem to be limited by the state of the science.

EXPLANATION OF TITLE V AND COMMITTEE VIEWS

Section 202 of the Ocean Dumping Act directs NOAA to "initiate a comprehensive and continuing program of research with respect to the possible long-range effects of pollution, overfishing, and man-induced changes of ocean ecosystems". The Committee commends NOAA on the research program which it has developed in response to its Congressional mandate and feels that, in the light of nearly ten years of experience, it would be useful to specify some of the necessary elements of that research program. Therefore, Section 502 lists four factors which the Committee believes that NOAA must consider in designing a research and monitoring program which will be responsive to the major policy questions of the 1980s.

Subsections 502(l)(1) and 502(l)(2) directs NOAA to play a a more active role, along with EPA, in developing and evaluating the testing methods utilized by EPA in its ocean dumping permit criteria. NOAA has historically played the role of the "honest broker" in cases such as the 1980 New York Harbor PCB controversy. However, in light of proposed cutbacks in the EPA research program and in light of NOAA's well-established expertise in ocean pollution, the Committee feels that NOAA has a more active role to play in assuring that these testing criteria continue to be refined during the 1980s.

Subsection 502(l)(3) directs NOAA to continue studies on the "assimilative capacity" of the oceans. Continued refinement of the assimilative capacity concept is clearly needed if it is ever to be utilized as a model for managing waste disposal in the oceans. Subsection 502(l)(4) is intended to direct NOAA to continue ongoing programs such as the Northeast Monitoring Program (NEMP), which have been threatened by recent budgetary cutbacks. The Committee believes that the value of such progrtams tends to increase with time and that it would be unwise for NOAA to terminate any of its long-term monitoring programs until future research indicates that new directions are appropriate.

Section 503 directs NOAA, in cooperation with EPA, to report on the alternative methods of sewage sludge disposal in the New York region. Despite the fact that several Federal agencies and departments have conducted considerable research regarding the environmental effects of waste disposal in various media, no comprehensive cross-media comparison of waste disposal has been attempted. For example, research regarding the effects of ocean disposal of sewage sludge slackened after passage of the 1981 deadline, with the result that the potential effects of such disposal are not well understood. Because of such inadequacies in the research base, it is impossible at the present time to determine whether land or ocean disposal of a given waste would be more threatening to human health and the environment. The Committee feels that cross-media analyses of waste disposal must commence immediately. NOAA is clearly the agency with the greatest expertise in assessing effects of oceanic disposal, and the Committee expects to take the lead in this area.

Section 504 contains authorization of appropriations for Title II of the Marine Protection, Research, and Sanctuaries Act for fiscal years 1983 and 1984. The Committee intends that the $12,000,000 authorized for fiscal year 1983 be allocated as follows: $2.5 million for ocean dumping research (Section 201 of P.L. 92-532); $5.0 million for long-term effects research (Section 202 of P.L. 92-532); $1.5 million for Hudson-Raritan studies; $2.5 million for Section 502 of this Act; and $0.5 million for Section 503 of this Act.

TITLE VI—OTHER PROGRAMS

Title VI would extend the appropriation authorization for reporting weather modification activities for fiscal years 1983 and 1984. An extension of the authorization for $100,000 during fiscal year 1983 was sought by the Administration.

V. Cost and Budget Data

The bill will authorize appropriations in the amounts of $542,779,000 for fiscal year 1983 and $575,346,000 for fiscal year 1984.

In accordance with the requirements of Section 252(b) of the Legislative Reorganization Act of 1970, the Committee notes that this bill is an authorization bill for two years. If the program authorized under this bill remains substantially unchanged during the next five years and the same level of effort is expended, there will be no change in costs other than those occasioned by inflation or Federal salary increases. The Committee notes that there are several new initiatives contained within the programs authorized in this bill which may require increased funding in future fiscal years. The amount and timing of any such increases depends upon findings and recommendations that result from the early stages of the program in question. The Committee intends to monitor closely the progress in these areas and to scrutinize carefully any request for substantially increased funding in commensurate fiscal years.

VI. Oversight Findings and Recommendations

Oversight findings and recommendations pursuant to clause 2(1)(3)(A), rule XI, by the Committee on Sciences and Technology under the authority of rule X, clause 2(b)(1) and clause (3)(F), of the Rules of the House of Representatives are incorporated in the recommendations found in the present bill and report.

VII. Congressional Budget Act Information

This bill provides for new authorization rather than new budget authority and consequently the provisions of section 308(a) of the Congressional Budget Act of 1974 are not applicable.

VIII. Congressional Budget Office—Cost Estimate

1. Bill number: H.R. 6324.

2. Bill title: Atmospheric, Climatic, and Ocean Pollution Act of 1982.

3. Bill status: As ordered reported by the House Committee on Science and Technology, May 18, 1982.

4. Bill purpose: This bill authorizes the appropriation of $545.6 million in 1983 and $578.1 million in 1984 to the National Oceanic and Atmospheric Administration (NOAA) for developing and operating its atmospheric, space, and marine programs. Among other amendments, the bill amends the National Ocean Pollution Planning Act of 1978 to create a Great Lakes Research Office within NOAA.

5. Cost estimate:

[By fiscal years, in millions of dollars]

	1983	1984	1985	1986	1987
Authorization level	545.6	578.1			
Estimated outlays	396.8	554.9	151.0	15.2	5.8

The costs of this bill fall within budget function 300.

6. Basis of estimate: The authorization levels are those stated in the bill and are assumed to be appropriated prior to the beginning of each fiscal year. Outlays were estimated based on information from NOAA and on historical spending patterns for these and similar programs.

7. Estimate comparison: None.

8. Previous CBO estimate: A cost estimate was prepared on May 17, 1982, for H.R. 6324, as ordered reported by the House Committee on Merchant Marine and Fisheries. That version of the bill authorized the appropriation of $570.9 million in 1983 and $604.2 million in 1984 for atmospheric, space, and marine programs.

9. Estimate prepared by: Anne E. Hoffman.

10. Estimate approved by: C. G. Nuckols (for James L. Blum, Assistant Director for Budget Analysis).

IX. OVERSIGHT FINDINGS AND RECOMMENDATIONS, COMMITTEE ON GOVERNMENT OPERATIONS

No findings or recommendations on oversight activity pursuant to clause 2(b)(2), rule X, and clause 2(1)(3)(D), rule XI, of the Rules of the House of Representatives have been submitted by the Committee on Government Operations for inclusion in this report.

X. EFFECT OF LEGISLATION ON INFLATION

In accordance with rule XI, clause 2(1)(4) of the Rules of the House of Representatives, this legislation is assessed to have no adverse inflationary effect on prices and costs in the operation of the national economy.

Expenditures authorized in this legislation are made in support of the research and development and meteorological services programs of the National Oceanic and Atmospheric Administration. The program of research and development supported by this bill produces the valid scientific information and most cost-effective technologies for meeting national priorities in the assessment and management of atmospheric and climate resources. It is the Committee's view that in the long run a well-managed program of research and development will result in savings by providing the most economically feasible means to achieve important national goals. Similarly, the Committee views the services supported by this bill, particularly those which are provided directly to the user community by the National Weather Service, as a vital element in reducing the overall economnic costs of the other national programs—in energy, environmental protection, agriculture and transportation, among others—which are supported by those services.

XI. CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

In compliance with clause 3 of rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, existing law in which no change is proposed is shown in roman):

NATIONAL CLIMATE PROGRAM ACT

* * * * * * *

SEC. 4. DEFINITIONS.

As used in this Act, unless the context otherwise requires:

(1) The term "Board" means the Climate Program Policy Board.

[(1)**]** *(2)* The term "Office" means the National Climate Program Office.

[(2)**]** *(3)* The term "Program" means the National Climate Program.

[(3)**]** *(4)* The term "Secretary" means the Secretary of Commerce.

SEC. 5. NATIONAL CLIMATE PROGRAM.

(a) Establishment.—The President shall establish a National Climate Program in accordance with the provisions, findings and purposes of this Act.

(b) Duties.—The President shall—

(1) promulgate the 5-year plans described in subsection (d)(9);

(2) define the roles in the Program of Federal officers, departments, and agencies, including the Departments of Agriculture, Commerce, Defense, Energy, Interior, State, and Transportation; the Environmental Protection Agency; the National Aeronautics and Space Administration; the Council on Environmental Quality; the National Science Foundation; and the Office of Science and Technology Policy; and

(3) provide for Program coordination.

(c) National Climate Program Office.—*(1)* The Secretary shall establish within the Department of Commerce a National Climate Program Office not later than 30 days after the date of the enactment of this Act. **[**The Office shall be the lead entity responsible for administering the Program.**]**

(2) The Office shall—

(A) serve as the lead entity responsible for administering the program,

(B) be headed by a Director who shall represent the Climate Program Policy Board and shall be the spokesman for the program,

(C) serve as the staff for the Board and its supporting committees and working groups,

(D) review each agency budget request transmitted under subsection (h)(1) and submit an analysis of the request to the Board for its review.

(E) be responsible for coordinating interagency participation in international climate-related activities, and

(F) work with the National Academy of Sciences and other private, academic, State, and local groups in preparing and implementing the climate plan (described in subsection (d)(9)) and the program.

The analysis described in subparagaph (D) shall include an analysis of how each agency's budget request relates to the priorities and goals of the program established pursuant to this Act.

(3) The Secretary may provide, through the Office, financial assistance, in the form of contracts or grant or cooperative agreements, for climate-related activities which are needed to meet the goals and priorities of the program set forth in the climate plan pursuant to subsection (d)(9), if such goals and priorities are not being adequately addressed by any Federal department, agency, or instrumentality.

(4) Each Federal officer, employee, department and agency involved in the Program shall cooperate with the Secretary in carrying out the provisions of this Act.

(d) PROGRAM ELEMENTS.—The Program shall include, but not be limited to, the following elements:

(1) assessments of the effect of climate on the natural environment, agricultural production, energy supply and demand, land and water resources, transportation, human health and national security. Such assessments shall be conducted to the maximum extent possible by those Federal agencies having national programs in food, fiber, raw materials, energy, transportation, land and water management, and other such responsibilities, in accordance with existing laws and regulations. Where appropriate such assessments may include recommendations for action;

(2) basic and applied research to improve the understanding of climate processes, natural and man induced, and the social, economic, and political implications of climate change;

(3) methods for improving climate forecasts on a monthly, seasonal, yearly, and longer basis;

(4) global data collection, and monitoring and analysis activities to provide reliable, useful and readily available information on a continuing basis;

(5) systems for the management and active dissemination of climatological data, information and assessments, including mechanisms for consultation with current and potential users;

(6) measures for increasing international cooperation in climate research, monitoring, analysis and data dissemination;

(7) mechanisms for intergovernmental climate-related studies and services including participation by universities, the private sector and others concerned with applied research and advisory services **[**;**]**. *Such mechanisms may provide, among others, for the following State and regional services and functions: (A) studies relating to and analyses of climatic effects on agricultural production, water resources, energy needs, and other critical sectors of the economy, (B) atmospheric data collection and monitoring on a statewide and regional basis, (C) advice to regional, State, and local government agencies regarding climate-related issues, (D) information to users within the State regarding climate and climatic effects, and (E) information to the Secretary regarding the needs of persons within the State for climate-related services, information, and data. The Secretary may make annual grants to any State or group of States, such grants to be made available to public or private educational institutions, to State agencies, and to other persons or institutions qualified to conduct climate-related studies or provide climate-related services;*

(8) experimental climate forecast centers, which shall (A) be responsible for making and routinely updating experimental climate forecasts of a monthly, seasonal, annual, longer nature, based on a variety of experimental techniques; (B) establish procedures to have forecasts reviewed and their accuracy evaluated; and (C) protect against premature reliance on such experimental forecasts; and

(9) a preliminary 5-year plan, to be submitted to the Congress for review and comment, not later than 180 days after the enactment of this Act, and a final 5-year plan to be submitted to the Congress not later than 1 year after the enactment of this Act, that shall be revised and extended [biennially] *at a frequency (not more often than biennially or less often than quadrennially) determined by the Board.* Each plan shall establish the goals and priorities for the Program, including [the intergovernmental program under section 6] *the intergovernmental program described in paragraph (7)* over the subsequent 5-year period, and shall contain details regarding (A) the role of Federal agencies in the programs, (B) Federal funding required to enable the Program to achieve such goals, and (C) Program accomplishments that must be achieved to ensure that Program goals are met within the time frame established by the plan.

(e) CLIMATE PROGRAM POLICY BOARD.—(1) The Secretary shall establish and maintain an interagency Climate Program Policy Board, consisting of representatives of the Federal agencies specified in subsection (b)(2) and any other agency which the Secretary believes should participate in the program.

(2) The Board shall—

(A) be responsible for coordinated planning and progress review for the program,

(B) review all agency and department budget requests related to climate transmitted under subsection (h)(1) and submit a report to the Office of Management and Budget concerning such budget requests,

(C) establish and maintain such interagency groups as the Board determines to be necessary to carry out its activities, and

(D) establish and maintain a committee of users and producers of climate data, information, and services to advise the Board, the Director, and the Congress on the conduct of the program.

(3) The Board biennially shall select a chair from among its members. A Board member who is a representative of an agency may not serve as chair of the Board for a term if an individual who represented that same agency on the Board served as the Board's chair for the previous term.

[(e) ADVISORY COMMITTEE AND INTERAGENCY GROUPS.—(1) The Secretary shall establish and maintain an advisory committee of users and producers of climate data, information and services to advise the Secretary and the Congress on the conduct of the Program. Members of such committee shall not be employed by the Federal Government and may receive compensation at the daily rate for GS–16 of the General Schedule for each day engaged in the actual performance of their duties for the committee and while so serving away from their homes or regular place of business may be allowed travel expenses, including per diem in lieu of subsistence.

[(2) The Secretary shall establish and maintain such interagency groups as are necessary and appropriate to assist in carrying out responsibilities under this Act.]

(f) COOPERATION.—(1) The program shall be conducted so as to encourage cooperation with, and participation in the Program by, other organizations or agencies involved in related activities. For this purpose the Secretary shall cooperate and participate with other Federal agencies, and foreign, international, and domestic organizations and agencies involved in international or domestic climate-related programs.

(2) The Secretary and the Secretary of State shall cooperate *with the Office* in (A) providing representation at climate-related international meetings and conferences in which the United States participates, and (B) coordinating the activities of the Program with the climate programs of other nations and international agencies and organizations, including the World Meteorological Organization, the International Council of Scientific Unions, the United Nations Environmental Program, the United Nations Educational Scientific, and Cultural Organization, the World Health Organization, and Food and Agriculture Organization.

(g) BUDGETING.—(1) Each Federal agency and department participating in the Program, shall prepare and submit to the Office of Management and Budget, on or before the date of submission of departmental requests for appropriations to the Office of Management and Budget, an annual request for appropriations for the Program for the subsequent fiscal year *and shall transmit a copy of such request to the National Climate Program Office*. The Office of Management and Budget shall review the request for appropriations as an integrated, coherent, multiagency request.

(2) Section 304 of the Act of October 18, 1962 (31 U.S.C. 25) (relating to preparation of horizontal budgets for meteorology), is amended—

(A) by inserting "and of the National Climate Program established under the National Climate Program Act" after "meterology", and

(B) by striking out "aspects of the program" and inserting in lieu thereof "aspects of the programs".

The amendments made by the preceding sentence shall apply with respect to budgets submitted for fiscal years beginning 6 months or more after the date of the enactment of this Act.

SEC. 6. INTERGOVERNMENTAL CLIMATE PROGRAMS.

[(a) ESTABLISHMENT.—The Secretary shall establish a program for Federal and State cooperative activities in climate studies and advisory services. The Secretary is authorized to make annual grants to any State or group of States, such grants to be made available to public or private educational institutions, to Sate agencies and to other persons or institutions qualified to conduct climate-related studies or provide climate-related services. Such grants may be made for not more than 50 percent of the costs, in any one year, of the research conducted or services provided under the grant. Federal funds recevied from other sources shall not be used to pay the remaining share of the cost of such research or services. The Secretary shall work with other appropriate mission agencies in conducting this program.

[(b) Detail of the Intergovernmental Program.—The intergovernmental program shall provide, among others, the following State and regional services and functions:

[(1) studies relating to an analyses of climatic effects on agricultural production, water resources, energy needs, and other critical sectors of the economy;

[(2) atmospheric data collection and monitoring on a statewide and regional basis;

[(3) advice to regional, State, and local government agencies regarding climate-related issues;

[(4) information to users within the State regarding climate and climatic effects; and

[(5) information to the Secretary regarding the needs of persons within the State for climate-related services, information and data.

[(c) Intergovernmental Program Requirements.—Prior to making a grant to any State or group of States under this section, the Secretary shall find that—

[(1) the State, or each of the States in group, has adopted a State climate program in accordance with the provisions of this Act and rules and regulations promulgated by the Secretary; and

[(2) the State, or each of the States in a group has—

[(A) integrated its climate program with the Program; and

[(B) established an effective mechanism of consultation and coordination with Federal and local government officials and users within the State.

[The Secretary shall insure that grants made to a State or group of States under this section are made on an equitable basis.]

SEC. 7. ANNUAL REPORT.

The Secretary shall prepare and submit to the President and the authorizing committees of the Congress, not later than [January 30] *March 31* of each year, a report on the activities conducted pursuant to this Act during the preceding fiscal year, including—

(a) a summary of the achievements of the Program during the previous fiscal year;

(b) an analusis of the progress made toward achieving the goals and objectives of the Program;

(c) a copy of the 5-year plan and any changes made in such plan;

(d) a summary of the multiagency budget request for the Program of subsection 5(g); and

(e) any recommendations for additional legislation which may be required to assist in achieving the purposes of the Act.

SEC. 8. CONTRACT AND GRANT AUTHORITY; RECORDS AND AUDITS.

(a) Functions vested in any Federal officer or agency by this Act or under the Program may be exercised through the facilities and personnel of the agency involved or[, to the extent provided or approved in advance in appropriation Acts, [by other persons or entities under contracts or grant arrangements entered into by such officer or agency.

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NATIONAL OCEAN POLLUTION PLANNING ACT OF 1978

* * * * * * *

SEC. 2. DEFINITIONS.

For purposes of this Act (unless the context requires otherwise)—

(1) the term "Administration" means the National Oceanic and Atmospheric Administration;

(2) the term "Administrator" means the Administrator of the National Oceanic and Atmospheric Administration;

(3) the term "Director" means the Director of the Office of Science and Technology Policy in the Executive Office of the President;

(4) the term "Executive Director" means the Executive Director of the Great Lakes Research Office established by section 202 of this Act;

(5) the term "Great Lakes" means Lake Ontario (including the Saint Lawrence River from Lake Ontario to the forty-fifth parallel of latitute), Lake Erie, Lake Huron (including Lake Saint Clair), Lake Michigan, and Lake Superior;

(6) the term "marine environment" means the coastal zone (as that term is defined in section 304(1) of the Coastal Zone Management Act of 1972 (16 U.S.C. 1453(1))), the seabed, subsoil, and waters of the territorial sea of the United States, the waters of any zone over which the United States asserts exclusive fishery management authority, the waters of the high seas, the seabed and subsoil of and beyond the outer Continental Shelf, and the Great Lakes;

(7) the term "ocean and coastal resource" means any resource, whether living (including natural or cultured plant life, fish, shellfish, marine mammals, and wildlife), nonliving (including energy sources, minerals, and chemical substances), manmade, tangible, intangible, actual, or potential which is located in, derived from, or traceable to, the marine environment and includes the habitat of any such living resource, the coastal space, the ecosystems, the nutrient-rich areas, and the other components of the marine environment which contribute to or provide (or which are capable of contributing to or providing) recreational, scenic, esthetic, biological, habitational, commercial, economic, or conservation values; and

(8) the term "ocean pollution" means any short-term or long-term change in the marine environment.

TITLE I—OCEAN POLLUTION RESEARCH

SEC. [2.]*101*. FINDINGS AND PURPOSES.

(a) FINDINGS.—The Congress finds and declares the following:

(1) Man's activities in the marine environment can have a profound short-term and long-term impact on such environment and greatly affect ocean and coastal resources therein.

(2) There is a need to establish a comprehensive Federal plan for ocean pollution research and development and monitoring, with particular attention being given to the inputs, fates, and effects of pollutants in the marine environment.

(3) Man will increasingly be forced to rely on ocean and coastal resources as other resources are depleted. Our ability to protect, preserve, develop, and utilize these ocean and coastal resources is directly related to our understanding of the effects which ocean pollution has upon such resources.

(4) Numerous departments, agencies, and instrumentalities of the Federal Government sponsor, support, or fund activities relating to ocean pollution research and development and monitoring. However, such activities are often uncoordinated and can result in unnecessary duplication.

(5) Better planning and more effective use of available funds, personnel, vessels, facilities, and equipment is the key to effective Federal action regarding ocean pollution research and development and monitoring.

(b) PURPOSES.—It is therefore the purpose of the Congress in this [Act] *title*—

(1) to establish a comprehensive 5-year plan for Federal ocean pollution research and development and monitoring programs in order to provide planning for, coordination of, and dissemination of information with respect to such programs within the Federal Government;

(2) to develop the necessary base of information to support, and to provide for, the rational, efficient, and equitable utilization, conservation, and development of ocean and coastal resources; and

(3) to designate the National Oceanic and Atmospheric Administration as the lead Federal agency for preparing the plan referred to in paragraph (1) and to require the Administration to carry out a comprehensive program of ocean pollution research and development and monitoring under the plan.

[SEC. 3. DEFINITIONS.

[As used in this Act, unless the context otherwise requires—

[(1) The term "Administration" means the National Oceanic and Atmospheric Administration.

[(2) The term "Administrator" means the Administrator of the Administration.

[(3) The term "Director" means the Director of the Office of Science and Technology Policy in the Executive Office of the President.

[(4) The term "marine environment" means the coastal zone (as defined in section 304(1) of the Coastal Zone Management Act of 1972 (16 U.S.C. 1453(1))); the seabed, subsoil, and waters of the territorial sea of the United States; the waters of any zone over which the United States asserts exclusive fishery management authority; the waters of the high seas; and the seabed and subsoil of and beyond the Outer Continental Shelf.

[(5) The term "ocean and coastal resource" has the same meaning as is given such term in section 203(7) of the National Sea Grant Program Act (33 U.S.C. 1122(7)).

[(6) The term "ocean pollution" means any short-term or long-term change in the marine environment.]

SEC. [4.] *102.* COMPREHENSIVE FEDERAL PLAN RELATING TO OCEAN POLLUTION.

(a) Lead Agency for Plan.—The Administrator, in consultation with the Director and other appropriate Federal officials having authority over ocean pollution research and development and monitoring programs, shall prepare, in accordance with this section, a comprehensive 5-year plan (hereinafter in this Act referred to as the "Plan") for the overall Federal effort in ocean pollution research and development and monitoring. The Plan shall be prepared and submitted to Congress and the President on or before February 15, 1979, and a revision of the Plan shall be prepared and so submitted by September 15 of each odd-numbered year occurring after 1979.

(b) Content of Plan.—The Plan shall contain, but need not be limited to, the following elements:

(1) Assessment and ordering of national needs and problems.—The Plan shall—

(A) identify those national needs and problems, which relate to specific aspects of ocean pollution (including, but not limited to, the effects of ocean pollution on the economic, social, and environmental values of ocean and coastal resources), which exist and will arise during the Plan period;

(B) establish the priority, based upon the value and cost of information which can be obtained from specific ocean pollution research and development and monitoring programs and projects, in which such needs should be be met, and such problems should be solved, during the Plan period; and

(C) contain, if pursuant to the preparation of any revision of the Plan required under subsection (a) it is determined that any national need or problem or priority set forth in the preceding version of the Plan should be changed, a detailed explanation of the reasons for the change.

(2) Existing federal capability.—The Plan shall contain—

(A) a detailed listing of all existing Federal programs relating to ocean pollution research and development and monitoring (including, but not limited to, general research on marine ecosystems), which listing shall include, with respect to each such program—

(i) a catalogue of the Federal personnel, facilities, vessels and other equipment currently assigned to, or used for, the program, and

(ii) a detailed description of the existing goals and costs of the program, including, but not limited to, a categorical breakdown of the funds currently being expended, and planned to be expended, to conduct the program; and

(B) an analysis of the extent to which each such program, if continued on the basis and at the funding level described pursuant to subparagraph (A)(ii), will assist in meeting the priorities set forth pursuant to paragraph (1)(B) during the Plan period.

(3) POLICY RECOMMENDATIONS.—If it is determined, as a result of the analysis required to be made under paragraph (2)(B), that the priorities set forth pursuant to paragraph (1)(B) will not be adequately met during the Plan period using the existing Federal capability described pursuant to paragraph (2)(A), the Plan shall contain those recommendations for changes in the overall Federal effort in ocean pollution research and development and monitoring which would ensure that those priorities are adequately met during the Plan period. Such recommendations may include, but need not be limited to—

(A) changes in the goals to be achieved under various existing Federal ocean pollution research and development and monitoring programs;

(B) suggested increases and decreases in the funding for any such existing program consistent with the extent to which such program contributes to the meeting of such priorities;

(C) specific proposals for interagency cooperation in cases in which the pooling of the resources of two or more Federal departments, agencies, or instrumentalities under existing programs could further efforts to meet such priorities or would eliminate duplication of effort; and

(D) suggested legislation to establish new Federal programs considered to be necessary if such priorities are to be met.

(4) BUDGET REVIEW.—The Plan shall contain a description of actions taken by the Administrator and the Director to coordinate the budget review process for the purpose of ensuring interagency coordination and cooperation in (A) the carrying out of Federal ocean pollution research and development and monitoring programs; and (B) eliminating unnecessary duplication of effort among such programs.

(c) For purposes of this section, the term "Plan period" means—

(1) with respect to the Plan as required to be submitted on February 15, 1979, the period of 5 fiscal years beginning on October 1, 1978; and

(2) with respect to each revision of the Plan, the period of 5 fiscal years beginning on October 1 of the year before the year in which the revision is required to be prepared under subsection (a).

SEC. [5.] *103.* COMPREHENSIVE OCEAN POLLUTION PROGRAM IN THE ADMINISTRATION.

(a) ESTABLISHMENT OF PROGRAM.—The Administrator shall establish within the Administration a comprehensive, coordinated, and effective ocean pollution research and development and monitoring program. The Administrator shall carry out all projects and activities under the program in a manner consistent with the Plan.

(b) CONTENT OF THE PROGRAM.—The program required to be established under subsection (a) shall include, but not be limited to—

(1) all projects and activities relating to ocean pollution research and development and monitoring for which the Administrator has responsibility under provisions of law (including, but not limited to, title II of the Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1441–1444) other than paragraph (2);

(2) such projects and activities addressed to the priorities set forth in the Plan pursuant to section 4(b)(1)(B) that can be appropriately conducted within the Administration; and

(3) the provision of financial assistance under section [6.] *104*.

SEC. [6.] *104.* FINANCIAL ASSISTANCE.

(a) GRANTS AND CONTRACTS.—The Administrator may provide financial assistance in the form of grants or contracts for research and development and monitoring projects or activities which are needed to meet priorities set forth in the Plan pursuant to section [4] 102(b)(1)(B), if such priorities are not being adequately addressed by any Federal department, agency, or instrumentality.

(b) APPLICATIONS FOR ASSISTANCE.—Any person, including institutions of higher education and departments, agencies, and instrumentalities of the Federal Government or of any State or political subdivision thereof, may apply for financial assistance under this section for the conduct of projects and activities described in subsection (a), and, in addition, specific proposals may be invited. Each application for financial assistance shall be made in writing in such form and manner, and contain such information, as the Administrator may require. The Administrator may enter into contracts under this section without regard to section 3709 of the Revised Statutes of the United States (41 U.S.C. 5).

(c) EXISTING PROGRAMS.—The projects and activities supported by grants or contracts made or entered into under this section shall, to the maximum extent practicable, be administered through existing Federal programs (including, but not limited to, the National Sea Grant Program) concerned with ocean pollution research and development and monitoring.

(d) ACTION BY ADMINISTRATOR.—The Administrator shall act upon each application for a grant or contract under this section within six months after the date on which all required information is received by the Administrator from the applicant. Each grant made or contract entered into under this section shall be subject to such terms and conditions as the Secretary deems necessary in order to protect the interests of the United States. The total amount paid pursuant to any such grant or contract may, in the discretion of the Administrator, be up to 100 percent of the total cost of the project or activity involved.

(e) RECORDS.—Each recipient of financial assistance under this section shall keep such records as the Administrator shall prescribe, including records which fully disclose the amount and disposition by such recipient of the proceeds of such assistance, the total cost of the project or activity in connection with which such assistance was given or used, the amount of that portion of the cost of the project or activity which was supplied by other sources, and such other records as will facilitate an effective audit. Such records shall be maintained for three years after the completion of such project or activity. The Administrator and the Comptroller General of the United States, or any of their duly authorized representatives, shall have access, for the purpose of audit and examination, to any books, documents, papers, and records of receipts which, in the opinion of the Administrator or of the Comptroller General, may be related or pertinent to such financial assistance.

[SEC. 7. INTERAGENCY COOPERATION.

[The head of each department, agency, or other instrumentality of the Federal Government which is engaged in or concerned with, or which has authority over, programs relating to ocean pollution research and development and monitoring—

[(1) shall cooperate with the Administrator in carrying out the purposes of this Act;

[(2) may, upon written request from the Administrator or Director, make available to the Administrator or Director, on a reimbursable basis or otherwise, such personnel (with their consent and without prejudice to their position and rating), services, or facilities as may be necessary to assist the Administrator or the Director to achieve the purposes of this Act; and

[(3) shall, upon a written request from the Administrator or Director, furnish such data or other information as the Administrator or Director deems necessary to fulfill the purposes of this Act.

[SEC. 8. DISSEMINATION OF INFORMATION.

[The Administrator shall ensure that the results, findings, and information regarding ocean pollution research and development and monitoring programs conducted or sponsored by the Federal government be disseminated in a timely manner, and in useful forms, to relevant departments, agencies, and instrumentalities of the Federal Government, and to other persons having an interest in ocean pollution research and development and monitoring.

[SEC. 9. EFFECT ON OTHER LAWS.

[Nothing in this Act shall be construed to amend, restrict, or otherwise alter the authority of any Federal department, agency, or instrumentality, under any law, to undertake research and development and monitoring relating to ocean pollution.

[SEC. 10. AUTHORIZATION OF APPROPRIATIONS.

[There are authorized to be appropriated to the Administration for the purposes of carrying out this Act not to exceed $5,000,000 for the fiscal year ending September 30, 1979, not to exceed $4,300,000 for the fiscal year ending September 30, 1980, not to exceed $3,000,000 for the fiscal year ending September 30, 1981, and not to exceed $4,000,000 for the fiscal year ending September 30, 1982.]

TITLE II—GREAT LAKES PROTECTION

SEC. 201. FINDINGS, PURPOSE, AND DECLARATION OF POLICY.

(a) FINDINGS.—The Congress finds that—

(1) the Great Lakes (containing 95 percent of the surface fresh water of the United States and 20 percent of the world's fresh

water) are among the greatest natural resources in the world, continuously serving the people of the United States and other nations as important sources of food, fresh water, recreation, beauty, and enjoyment.

(2) the Great Lakes are among the world's major waterways, each year carrying tons of waterborne shipping to and from all parts of the globe;

(3) the productivity and beauty of the Great Lakes in recent years have been diminished and threatened by water pollution, shoreline erosion, and sedimentation;

(4) numerous Federal agencies have initiated and supported research projects to study, enhance, manage, preserve, protect, or restore the resources of the Great Lakes;

(5) the various research projects relating to the Great Lakes, including those conducted at the college and university level and those conducted at the State and local level, can be more effectively coordinated in order to obtain maximum benefits; and

(6) a greater awareness of the importance of preserving and protecting the environmental quality of the Great Lakes is in the national interest.

(b) PURPOSE.—The purpose of this title is—

(1) to provide for a rational and effective coordination of federally supported research aimed at increasing fundamental knowledge in support of efforts to preserve and protect the environmental quality of the Great Lakes;

(2) to identify the needs and priorities for such research as will be required in the future to preserve and protect the environmental quality of the Great Lakes;

(3) to assure a comprehensive and balanced approach to federally supported research on the Great Lakes;

(4) to encourage the utilization of the results and findings of research relating to the Great Lakes in the decisionmaking processes which affect the environmental quality of the Great Lakes; and

(5) to foster public understanding, and to assure greater understanding at all levels of government, of the role of the Great Lakes as a unique national resource and the greatest ecological entity of its kind.

(c) DECLARATION OF POLICY.—The Congress, in recognizing the Great Lakes to be a unique national and international resource, declares that—

(1) it shall be the continuing policy of the Federal Government, in cooperation with State and local governments and other concerned public and private organizations, to use all practicable means and measures in a manner calculated to enhance, preserve, and protect the environmental quality of the Great Lakes, to create and maintain conditions under which individuals, industry, and the Great Lakes can exist in productive harmony, and to fulfill the social, economic, and other requirements of present and future generations; and

(2) it shall be the policy of the Federal Government to maximize international cooperation with Canada and other nations in maintaining, enhancing, preserving, and protecting the envi-

ronmental quality of the Great Lakes consistent with the foreign and domestic policies of the United States.

Sec. 202. GREAT LAKES RESEARCH OFFICE.

(a)(1) ESTABLISHMENT.—There is established within the Administration a Great Lakes Research Office. All facilities of the Great Lakes Research Office shall be located geographically either in the State of Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio, Pennsylvania, or New York.

(2) EXECUTIVE DIRECTOR.—The Great Lakes Research Office established by paragraph (1) shall be directed by an Executive Director appointed by the Administrator. Before making any appointment, the Administrator shall seek the recommendation of the Governors of Minnesota, Wisconsin, Illinois, Michigan, Indiana, Ohio, Pennsylvania and New York with respect to individuals who are qualified to serve as the Executive Director.

(3) STAFF.—The Executive Director may appoint such staff as the Executive Director determines are necessary to carry out the duties and responsibilities and to fulfill the purposes of this title. The Staff appointed pursuant to this paragraph shall be appointed subject to the provisions of title 5 of the United States Code governing appointments in the competitive service and shall be paid in accordance with the provisions of chapter 51 and subchapter III of chapter 53 of such title relating to classification and General Schedule pay rates.

(b) INVENTORY.—

(1) COMPILATION.—Not later than the date occurring one year after the date of the enactment of this title the Executive Director shall compile an inventory of all major actions taken, or planned to be taken, by Federal, State, or local governments which have, or may have, a significant effect on the environmental quality of the Great Lakes (with the significance of the effect to be determined by the Executive Director in conformance with the policy set forth in section 201). The inventory may be limited by the Executive Director to an inventory of major actions taken after January 1, 1977.

(2) REVIEW.—The Executive Director shall review the inventory compiled pursuant to paragraph (1), and include in the inventory any additional major actions described in paragraph (1), not later than the date occurring three calendar months after the date the compilation of such inventory is completed and not later than each date occurring three months after each review is completed. The Executive Director shall consult with Federal, State, and local officials in reviewing the inventory.

(3) SUBMISSION.—The inventory compiled pursuant to paragraph (1), and each review made pursuant to paragraph (2), shall be submitted to the President and the Congress.

(c) FUNCTIONS OF EXECUTIVE DIRECTOR.—

(1) KNOWLEDGE OF PROGRAMS AND PROJECTS.—The Executive Director shall be responsible for knowledge of programs and projects conducted or funded by the Federal Government which relate to the Great Lakes, including any program or project assisted under the National Sea Grant College Program Act (33 U.S.C. 1121–1131) and any program or project which carries on

research directed toward enhancing, preserving, or protecting the environmental quality of the Great Lakes.

(2) Direct research.—The Executive Director may direct the staff of the Great Lakes Research Office to conduct direct research in order to carry out the duties and responsibilities of the Office and to fulfill the purposes of this title.

(3) Contracts.—The Executive Director may enter into any contract which the Executive Director determines is necessary to carry out the duties and responsibilities of the Office.

(d) Consultation and Advisement by Executive Director.—In carrying out this title, the Executive director shall—

(1) consult with Federal, State, and local governmental officials responsible for maintaining, enhancing, preserving, protecting, or monitoring the environmental quality of the Great Lakes, including the Secretary of the Interior, the Administrator of the Environmental Protection Agency, the Director of the Office of Science and Technology Policy in the Executive Office of the President, the President of the National Academy of Sciences, the Director of the National Institutes of Health, the Chairman of the United States Section of the International Joint Commission-United States and Canada, the Chairman of the United States Section of the Great Lakes Fishery Commission, the Executive director of the Great Lakes Commission, and the Chief of Engineers of the United States Army Corps of Engineers; and

(2) advise such Federal, State, and local governmental officials on the effect of any Federal, State, or local governmental program or project on the environmental quality of the Great Lakes.

(e) Report.—Not later than the date occurring one calendar year after the date of the enactment of this title, the Executive Director shall submit to the President and the Congress a report containing—

(1) information on the current state of research efforts conducted or supported by the Federal Government to improve the environmental quality of the Great Lakes;

(2) recommendations for the improvement, increased coordination, and use of such research efforts;

(3) information on the degree of coordination among the States in the vicinity of the Great Lakes in efforts to preserve and protect the environmental quality of the Great Lakes; and

(4) recommendations for the improvement of such coordination among the States.

SEC. 203. GREAT LAKES ENVIRONMENTAL IMPACT ANALYSIS.

(a) Appendix.—The responsible Federal official shall include in every statement included pursuant to section 102(2)(C) of the National Environmental Policy Act of 1969 (42 U.S.C. 4332(2)(C)) in a recommendation or report on proposals for legislation, and other major Federal actions, which significantly affect the Great Lakes (with the significance of the effect to be determined by the Executive Director in conformance with the policy set forth in section 201) an appendix which makes special reference to the Great Lakes and which contains—

(1) an index to all material contained in such statement which relates to the Great Lakes; and

(2) a summary of all material contained in such statement which relates to the Great Lakes.

(b) COMMENTS.—The Executive Director shall submit to the responsible Federal official comments on each statement described in subsection (a) before the statement is included in a recommendation or report pursuant to section 102(2)(C) of the National Environmental Policy Act of 1969 (42 U.S.C. 4332(2)(C)).

(c) SUBMISSION OF APPENDIX AND COMMENTS.—Copies of any appendix required to be included in a statement pursuant to subsection (a), and any comments submitted by the Executive Director pursuant to subsection (b), shall be submitted to the President and made available to the public pursuant to section 552 of title 5 of the United States Code.

TITLE III—GENERAL PROVISIONS

SEC. 301. INTERAGENCY COOPERATION.

The head of each department, agency, or other instrumentality of the Federal Government which is engaged in, concerned with, or has authority over programs relating to ocean pollution research, development, and monitoring or over research to maintain, enhance, preserve, or protect the environmental quality of the Great Lakes.

(1) shall cooperate with the Administrator in carrying out the purposes of title I and shall cooperate with the Administrator and the Executive Director in carrying out the purposes of title II;

(2) may, upon written request from the Administrator, Director, or Executive Director, make available to the Administrator, Director, or Executive Director such personnel (with their consent and without prejudice to their position and rating), services, or facilities as may be necessary to assist the Administrator, Director, or Executive Director in achieving the purposes of this Act;

(3) shall, upon written request from the Administrator, Director, or Executive Director, furnish such data or other information as the Administrator, Director, or Executive Director determines is necessary to fulfill the purposes of this Act.

SEC. 302. DISSEMINATION OF INFORMATION.

(a) OCEAN POLLUTION INFORMATION.—The Administrator shall ensure that results, findings, and information regarding ocean pollution research, development, and monitoring programs conducted or sponsored by the Federal Government are disseminated in a timely manner and in useful forms to relevant departments, agencies, and instrumentalities of the Federal Government and to other persons having an interest in ocean pollution research, development, and monitoring.

(b) GREAT LAKES INFORMATION.—The Administrator and the Executive Director shall ensure that the results, findings, and information regarding the Great Lakes compiled by the Great Lakes Research Office are disseminated in a timely manner and in useful forms to relevant departments, agencies, and instrumentalities of

the Federal Government and to other persons having an interest in the environmental quality of the Great Lakes.

SEC. 303. EFFECT ON OTHER LAWS.

Nothing in this Act shall be construed to amend, restrict, or otherwise alter the authority of any Federal department, agency, or instrumentality under any law to undertake research, development, and monitoring relating to ocean pollution, to conduct research relating to the Great Lakes, or to undertake action pursuant to any other Federal law.

SEC. 304. AUTHORIZATION OF APPROPRIATIONS.

(a) AUTHORIZATION.—There are authorized to be appropriated to the Administration for the purposes of carrying out this Act not to exceed $5,000,000 for the fiscal year ending September 30, 1979; not to exceed $4,300,000 for the fiscal year ending September 30, 1980; not to exceed $3,000,000, for the fiscal year ending September 30, 1981; not to exceed $4,000,000 for the fiscal year ending September 30, 1982; and, of the funds authorized pursuant to section 201(a) of the Atmospheric, Climatic, and Ocean Pollution Act 1982, not to exceed $2,800,000 for the fiscal year ending September 30, 1983 and not to exceed $2,800,000 for the fiscal year ending September 30, 1984.

(b) LIMITATION.—Of any amount appropriated for a fiscal year ending after September 30, 1982, under the authorization contained in subsection (a) an amount not more than $750,000 may be expended by the Executive Director during a fiscal year to carry out title II of this Act.

MARINE PROTECTION, RESEARCH, AND SANCTUARIES ACT OF 1972

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TITLE II—COMPREHENSIVE RESEARCH ON OCEAN DUMPING

SEC. 201. The Secretary of Commerce, in coordination with the Secretary of the Department in which the Coast Guard is operating and with the Administrator shall, within six months of the enactment of this Act, initiate a comprehensive and continuing program of monitoring and research regarding the effects of the dumping of material into ocean waters or other coastal waters where the tide ebbs and flows or into the Great Lakes or their connecting waters and shall report [from time to time, not less frequently than annually,] *not later than March 1 of each year,* his findings (including an evaluation of the short-term ecological effects and the social and economic factors involved) to the Congress.

SEC. 202. (a) The Secretary of Commerce, in consultation with other appropriate Federal departments, agencies, and instrumentalities shall, within six months of the enactment of this Act, initiate a comprehensive and continuing program of research with respect to the possible long-range effects of pollution, overfishing, and man-induced changes of ocean ecosystems. In carrying out such research, the Secretary of Commerce shall take into account such factors as existing and proposed international policies affecting oceanic problems, economic considerations involved in both the protection and the use of the oceans, possible altenatives to existing programs, and ways in which the health of the oceans may best be preserved for the benefit of succeeding generations of mankind. *Such program shall include, but not be limited to—*

(1) the development of techniques to quantify and define, using scientific tests, the degradation of the marine environment;

(2) cooperative efforts with the Administrator of the Environmental Protection Agency to evaluate the usefulness of such techniques to the permit criteria program specified in section 102(a) of the Marine Protection, Research, and Sanctuaries Act of 1972 (16 U.S.C. 1442);

(3) the assessment of the ability of the marine environment to assimilate materials without degradation; and

(4) Continuing monitoring programs to assess the health of the marine environment, including but not limited to monitoring of bottom oxygen concentrations; contaminant levels in biota, sediments, and the water column; diseases in fish and shellfish; and changes in types and abundances of indicator species.

(b) In carrying out his responsibilities under this section, the Secretary of Commerce, under the foreign policy guidance of the President and pursuant to international agreements and treaties made by the President with the advice and consent of the Senate, may act alone or in conjunction with any other nation or group of nations, and shall make known the results of his activities by such channels of communication as may appear appropriate.

(c) [In March of each year,] *Not later than March 1 of each year,* the Secretary of Commerce shall report to the Congress on the results of activities undertaken by him pursuant to this section during the previous fiscal year.

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XII. COMMITTEE RECOMMENDATIONS

The Committee favorably reported the bill, H.R. 6324 by voice vote, a quorum being present, and recommends its enactment as amended.

MINORITY VIEWS—NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION AUTHORIZATION BILL

The Minority Members of the Science and Technology Committee reluctantly find it necessary to oppose the Committee bill, as amended, due to the request for a two year authorization imposing a 6 percent increase in spending for fiscal year 1984 spending, the reinstatement of a second polar orbiter, the additional paperwork and reporting requirements in sections 203 and 204, and for the establishment of a new Great Lakes Office clearly ignoring existing programs and offices within NOAA which could achieve the same goal.

Despite our differences, however, there is much agreement on both sides of the aisle on the vast majority of the research and development programs of NOAA. Specific areas of agreement include marine ecosystem research and analysis, the importance and necessity for a strong ocean pollution and ocean dumping research program, basic atmospheric and climatic research, and the weather service functions of NOAA. The alternative budget, offered by the Minority, supported these programs which the Majority and Minority agree on and did so at a level of increased yet reasonable funding.

The Majority's amendment to the bill displays an attempt to reduce a previous unacceptable funding level, yet the Minority still regards the level proposed too high. We regard our alternative budget, at a level of $16.5 above the NOAA request, to be a much more realistic approach to current fiscal realities. It is clear to us, and the American public, that this nation is struggling in its emergence from severe and deep economic troubles that have plagued us since the 1930's. Increased federal spending, at a level suggested by the Majority, would be counterproductive to the efforts to restore vitality and sustained growth to the economy.

The change made in the Administration's budget by the Minority affect four line items. First, an addition of $8,833,000 were made for three directorates: (1) $5.5 million for ocean dumping research; (2) $2.8 million for the reinstatement of the Great Lakes Environmental Research Laboratory; and (3) $.5 million for a NOAA/EPA joint cross-media sewage sludge study. Secondly, an addition of $6,000,000 were made for Weather Services/Supporting Research to provide for the continued procurement of NEXRAD, to restore $1 million to the Space Environmental Laboratory, to reinstate the Agricultural Weather Service Program, Fruit Frost Forecast Program, and Fire Weather Program, and finally, $2.0 million for the reinstatement of 45 weather stations. Thirdly, the increases in Atmospheric Research totalled $1,750,000 to be applied to the First Global Atmospheric Research Program ($.5 million), the World Climate Research Program ($.5 million), and $.75 million for basic research in other severe storms program under the Weather Modification category. The final and fourth line item change was a request for an increase of $120,000 million in user fees for the Environmental Data and Information Services.

It is not an easy task to make cuts in the National Oceanic and Atmospheric Administration; the Minority is unanimous in its support for NOAA's mandate. What the Minority Members wish to emphasize is the over-riding importance of supporting the Administration's funding levels as a means to fiscal responsibility and national recovery.

The preceding views are signed only by the Ranking Republican of the Full Committee and Subcommittee because of the time constraints imposed by the committee on filing the legislative report. Rule XI, cl. 2 of the House rules specifies that three legislative days will be provided for this purpose. The Committee imposed deadline was 12 hours after bill passage. In an attempt to meet that deadline, we have decided not to route these views for the signatures of other members who are certain to support this position.

William Carney.
Larry Winn, Jr.

HON. RAYMOND J. McGRATH, ADDITIONAL VIEWS ON NOAA AUTHORIZATION, MAY 18, 1982

During the full Committee consideration of the NOAA authorization, I supported and amendment to restore the second polar orbiter in the NOAA budget. I believe the reduction to a one orbiter system, as recommended in the fiscal year 1983 budget proposals submitted to Congress, would seriously degrade our nation's ability to provide accurate weather forecasting, particularly three to five day forecasts.

A single satellite system is vulnerable to failure. Without adequate backup, the effect on weather forecasting would be immediate and disastrous. Forecasts over the Northern and Southern Hemisphere oceans—even a day in advance—would be seriously deficient. The accuracy of medium range forecasts of three to ten days over much of the United States would be diminished to the point where numerical weather forecasts beyond five days would be of little value if any at all.

I believe the decision to reduce the system to one satellite was ill-advised, and did not take into account the economic benefits stemming from increased reliability of the two polar orbiter system. Research has shown that the 3 to 5 day forecasts are extremely improtant to agriculture, the building industry, water management, forestry, public utilities, fishing, and the safety of the general public.

The system is vital for our ability to predict major storms. If one satellite in orbit fails, we will have none, and there will be an extended time gap before a replacement satellite can be launched, Thus, we cold be without powerful microwave sounding capability during winter months or the hurricane season when it is urgently needed.

Studies of the impact of improved forecasts for agricutlute, aviation, and snow removal, where large quantifiable economic payoffs exist, point to benefits that are 10 to 100 or more times greater than the entire orbiter program costs.

NOAA has evidence that the three to five day forecasts are quite useful to utility companies where natural gas storage problems exist and gas rates are discounted for longer lead time between orders and deliveries. For example, Washington Gas Light Company estimated savings in 1981 of several million dollars through judicious use of long range forecasts in managing supplies and storage facilities.

The contruction industry is better able to schedule deliveries of materials, to planinterior and exterior work, and to coordinate activities of different groups of workmen with an accurate three to five day forecast.

The use of one versus two orbiting weather satellites could have a significan impact on the aviation industry using the shorter range global forecasts. It has been documented that improved wind forecasts of only one or two percent can result in substantial savings of fuel costs ($80 to $160 million annually). The 18 month launch scenario contained in the initial budget proposal leaves little margin for in-orbit or launch failure.

A premature in orbit failure or launch failure could result in a span of up to 18 months with no data. Up to now, NOAA has maintained a policy of requesting a launch within 120 days after notification to the U.S. Air Force, which provides the launch facilities at the Western Test Range, assuming vehicles are available. Under the reduced polar orbiting program proposed in the fiscal year 1983 budget recommendations, there is no provision for early launches. If the last satellite in orbit fails, services will be interrupted until the next scheduled launch 18 months later.

Reduction to a one polar system would adversely affect several programs, which though not operational today, have tremendous potential. One such program, the Agriculture and Resource Inventory Surveys Through Aerospace Remote Sensing (AgRISTARS), is in interagency effort aimed at provision of improved commodity production forecasts for major agricultural areas worldwide. Precipitation, duration of sunlight, maximum/minimum temperatures, snow cover, and crop-health indexes will be provided from the polar orbiters. A reduction from four observations per day as provided by the current two satellites, to two observations with the one satellite system will produce results far below our actual capabilities.

In summary, the benefits already realized, and those we will accrue in the future, far outweigh the additional expenditure contained in the amendment to restore the second orbiter.

RAYMOND J. MCGRATH.

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